lining Journal, OMMERCIAL GAZET

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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2174.-Vol. XLVII.

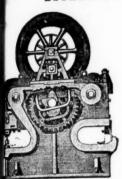
LONDON, SATURDAY, APRIL 21, 1877.

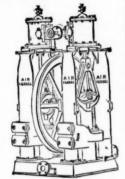
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SPECIALITIES ARE ALL SIZES OF m Pumps, Shipbuilders' Tools,

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DFIELD ROAD IRON WORKS, SALFORD, MANCHESTER.

Excellence Practical Success of Engines



Represented by Model exhibited by this Firm.

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LYON & DAVISON,

RONFOUNDERS, ENGINEERS, &c., Haydon Bridge, near NEWCASTLE-ON-TYNE,

Manufacturers of D SMELTING, REDUCING, AND REFINING FURNACES,

SLAG HEARTHS, AND SMELTERS' WORK GEAR. s and Estimates furnished for improved Lead or Copper Mining and Smelting Plant.

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acturers of all kinds of Iron; Steel, Copper, and Galvanised Wire Ropes; and Manilla Ropes, &c.: Round and Flat Shaft Ropes; Crab Ropes; Guide; Haulin; Ropes; and Galvanised Signal Strand; Ship's Standing Rigging complete: Patent Hempand Manilla Hawsers, Warps, Cordage, Spun-yarn, c.; Manilla Yarn for Telegraph Cables, and Flat Hemp Ropes for Driving; Steel Plough Ropes; Fencing Wire and Stand Lightning Conductors, &c.

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ARK and PALE OILS for MACHINERY, RAILWAY, and MINING RPOSES, from TWO SHILLINGS per gallon, and upwards. AGENTS WANTED.

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BENNETTS' SAFETY FUSE WORKS, ROSKEAR, CAMBORNE, CORNWALL.

LASTING FUSE FOR MINING AND ENGINEERING PURPOSES.

his for wet or dry ground, and effective in Tropical or Poler Climates.

. BENNETTS, having had many years experience as chief engineer with an Bickford, Smith, and Co., is now enabled to offer Fuse of every ariety of war manufacture, of best quality, and at moderate prices. He Lists and Sample Cards may be had on application at the above address. on Don Office, —H. HUGHES, Esq., 85, GRACECHURCH STREET.







PARIS, ORDER OF THE CROWN OF PRUSSIA. FALMOUTH: BRONZE MEDAL, 1867. SILVEE MEDAL, 1867

A DIPLOMA-HIGHEST OF ALL AWARDS-given by the Geographical Congress, Paris, 1875-M. Favre, Contractor, having exhibited the McKean Drill alone as the Model Boring Machine for the St. GOTHARD TUNNEL.

SILVER MEDAL of the Highland and West of Scotland Agricultural Society, 1875—HIGHEST AWARD.

At the south end of the St. Gothard Tunnel, where

THE MCKEAN ROCK DRI

tive weeks, ending February 7, was 24 90, 27 60, 24 80, 26 10, 28 30, 27 10, 28 40, 28 70 metres. Total advance of south heading during January was 121.30 metres, or 133 yards.

In a series of comparative trials made at the St. Gothard Tunnel, the McKean Rock Drill continued to work until the pressure was reduced to one-half atmosphere (7½ lbs.), showing almost the entire motive force to be available for the blow against the rock—a result of itself indicating many advantages.

The GREAT WESTERN RAILWAY has adopted thes Machines for the SEVERN TUNNEL; the LONDON AND NORTH-WESTERN RAILWAY for the FESTINIOG TUN-NEL: and the BRITISH GOVERNMENT for several Public Works. A considerable number of Mining Companies are now using them. Shafts and Galleries are driven at from three to six times the speed of hand labour, according to the size and number of machines employed, and with important saving in The ratio of advantage over hand labour is greatest where the rock is hardest.

These Machines possess many advantages, which give them a value unapproached by any other system of Boring Machine.

THE MCKEAN ROCK DRILL IS ATTAINING GENERAL USE THROUGHOUT THE WORLD FOR MINING, TUN-NELLING, QUARRYING, AND SUB-MARINE BORING.

The McKEAN ROCK DRILLS are the most powerful—the most portable—the most durable—the most compact—of the best mechanical device. They contain the fewest parts-have no weak parts-act without shock upon any of the operating parts-work with a lower pressure than any other Rock Drill-may be worked at a higher pressure than any other -may be run with safety to FIFTEEN HUNDRED STROKES PER MINUTE—do not require a mechanic to work them—are the smallest, shortest, and lightest of all machines-will give the longest feed without change of tool-work with long or short stroke at pleasure of operator.

The SAME Machine may be used for sinking, drifting, or open work. Their working parts are best protected against grit and accidents. The various methods of mounting them are the most efficient.

N.B.—Correspondents should state particulars as to character of work in hand in writing us for information, on receipt of which a special definite answer, with reference to our full illustrated catalogue, will be sent.

PORTABLE BOILERS, AIR COMPRESSORS, BORING STEEL, IRON, AND FLEXIBLE TUBING.

The McKean Drill may be seen in operation daily in London.

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ENGINEERS.

OFFICES. 42 BOROUGH ROAD, LONDON, S.E.; and 5. RUE SCRIBE, PARIS.

MANUFACTURED FOR MCKEAN AND CO. BY MRSSRS. P. AND W MACLELLAN, "CLUTHA IRONWORKS," GLASGOW.

The Warsop Rock Drill

Requires only 20 lbs. steam or air-pressure.

Has only two moving parts—thus ensuring freedom from de-rangement, and is absolutely self-feeding.

Is excessively light, and can be carried by one man, who can with the No. 1 size (weighing only 35 lbs.) drill 40 holes \(\frac{1}{4}\) in diameter and \(\frac{1}{2}\) in deep per minute, in the hardest Aberdeen granite for splitting purposes.

WARSOP AND HILL.

HYDRAULIC AND GENERAL ENGINEERS.

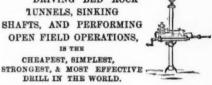
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STEAM and HYDRAULIC WINDING and PUMPING ENGINES of all kinds.

ROCK DRILL, **DUNN'S**

AIR COMPRESSORS,





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LONDON, E.C.

PATENT SELF-ACTING MINERAL DRESSING MACHINE COMPANY

(LIMITED).

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IMPORTANT NOTICE TO MINE PROPRIETORS.

MR. GEORGE GREEN, ENGINEER, ABERYSTWITH. SUPPLIES MACHINES under the above Company's Patents for DRESSING all METALLIC ORES. Dressing-floors having these Machines pos-1.—THEY ARE CHEAPER THAN ANY OTHER KIND IN FIRST OUTLAY.

2.—ONLY ABOUT ONE-FOURTH OF THE SPACE USUALLY OCCUPIED BY DRESSING-FLOORS IS REQUIRED. 3.-FROM 60 TO 70 PER CENT. OF THE LABOUR IN DRESSING, AND

FROM 5 TO 10 PER CENT. OF ORE OTHERWISE LOST, IS SAVED. 4.--THEY ARE THE ONLY MACHINES THAT MAKE THE ORE CLEAN FOR MARKET AT ONE OPERATION.

They have been supplied to some of the principal mines in the United Kingdom and abroad—viz.,

and abroad—viz.,
The Greenside Mines, Patterdale, Cumberland; London Lead Company's Mines
Darlington, Colberry, Nanthead, and Bollyhope; the Stonecroft and Greyside
Mines, Hesham, Northumberland; Wanlockhead Mines, Abington, Scotland (the
Duke of Buccleuch's); Bewick Partners, Haydon Bridge; the Old Darren, Esgairmwyn, and Yatumtuen Mines, in Cardiganshire; Mr. Beaumont's W.B. Mines,
Darlington; also Mr. Sewell, for Argentiferous Copper Mines, Pers; the Bratsberg Copper Mines, Norway, and Mines in Italy, Germany. United States of
America, and Australia from all of whom certificates of the complete efficiency of

WASTE HEAPS, consisting of refuse chats and skimpings of a former washing, containing a mixture of lead, blende, and sulphur, DRESSED TO A PROFIT.

Mr. BAINBRIDGE, C.E., of the London Company's Mines, Middletons in-Teesdale, by Parlington, writing on the 20th March, 1876, says—"The yearly profit on our Nanthead waste heaps amounted last year to £600, besides the machinery being occupied for some months in dressing ore-stuff from the mines. Of course, if it had been wholly engaged in dressing wastes our returns would have been greater; but it is giving us every satisfaction, and bringing the waste heaps into profitable use, which would otherwise remain dormant."

into profitable use, which would otherwise remain dormant."

Mr. T. B. STEWART, Manager of the Duke of Buccleuch's Mines, Wanlockhead, Abington, N.B., writing on 20th March, 1876, says—"I have much pleasure in stating that a full and superior set of your Ore Dressing Machinery has been at work at these mines for fully a month, and each day as the moving parts become smoother, and those in charge understand the working of the machinery better, it gives increasing satisfaction, the ore being dressed more quickly, cheaply, and satisfactorily than by any other method."

Mr. BAINBRIDGE, speaking of machinery supplied Colberry Mines, says—"Your machinery saves fully one half on old wages, and vastly more on the wages we have now to pay. Over and above the saving in cost is the saving in ore, which is u.t much short of 10 per cent."

GREENSIDE MINE COMPANY Patterdale, near Panrith, say—"The

GREENSIDE MINE COMPANY, Patterdale, near Penrith, say-" The

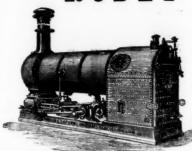
Mr. MONTAGUE BEALE says—"It will separate ore, however close to mechanical mixture, in such a way as no other machines can do."

Mr. C. Dodsworth says—"It is the very best for the purpose and will do for any kind of metallic ores—the very thing so long needed for dress."

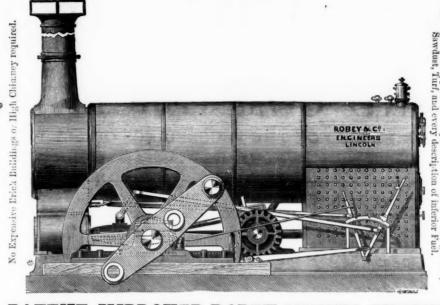
Drawings, specifications, and estimates will be forwarded on application to-

GEORGE GREEN, M.E., ABERYSTWITH SOUTH WALES.

ENGINEERS, LINCOLN, ROBEY



THE PATENT ROBEY FIXED ENGINE AND LOCOMOTIVE BOILER COMBINED.



PATENT IMPROVED ROBEY MINING ENGINE,

OF ALL SIZES, FROM 4 TO 50-HORSE POWER.

Some of the advantages of this New Engine are as follows:-

SMALL FIRST COST. SAVING OF TIME AND EXPENSE IN ERECTING. EASE, SAFETY,
AND ECONOMY IN WORKING. GREAT SAVING IN FUEL.

This New Engine is free from all the objections that can be urged against using the Semi-Portable Engine for permanent work, because it possesses the rigidity and durability of the Horizontal Engine, and at the same time retains the advantages of the Semi-Portable in saving time and expense in fixing.



(Also above illustrated) is admirably adapted for driving Rolling Mills, Saw Mills, Brick Machinery, Pumping Machinery, and all descriptions of Fixed Machinery.

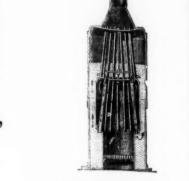
ENGINES UP TO 200 EFFECTIVE HORSE-POWER ALWAYS IN PROGRESS.

Prices and full particulars of all the Machinery here illustrated on upplication to the Sole Manufacturers,



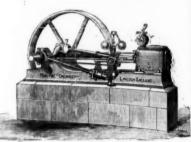
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PATENT VERTICAL BOILERS,



IMPROVED HORIZONTAL FIXED STEAM ENGINE,

PATENT PORTABLE STEAM ENGINES BOILERS.



SUPERIOR PORTABLE ENGINES, 4 to 50-horse power.





CONTRACTORS LOCOMOTIVE.







The ORIGINAL combined Vertical Engines and Boilers, introduced by Mr. CHAPLIN in 1855, specially designed and adapted for

Pumping, Winding, Hoisting, Sawing, Driving Machinery, and for General Contractors' Work, Railway Sidings, Coal Mines, Quarries, Gas Works, &c.

WIMSHURST. HOLLICK, & CO., ENCINEERS, 34, WALBROOK, LONDON, E.C. WORKS:—REGENT'S CANAL DOCK, 602, COMMERCIAL ROAD EAST, LONDON, E. (Near Stepney Station).

Parties are cautioned against using or purchasing Imitations or Infringements of these Patent Manufactures.



STATIONARY ENGINES

From 1 to 30-horse power. With Gearing for Pumping, Sawing, &c., when required.

PORTABLE and FIXED STEAM CRANES:

STEAM DERRICK CRANES and OVERHEAD TRAVELLERS; HOISTING ENGINES, Portable or Fixed, with or without Jib; SHIPS' ENGINES and DISTILLING APPARATUS (sanctioned by H.M. Government);

ENGINES and BOILERS, for light Screw and Paddle Steamers; STEAM YACHTS & LAUNCHES; STEAM CARGO BARGES, &c.

PATENTEES AND SOLE MANUFACTURERS:

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LONDON HOUSE: M'KENDRICK, BALL, AND CO., 63, QUEEN VICTORIA STREET, LONDON, E.C.

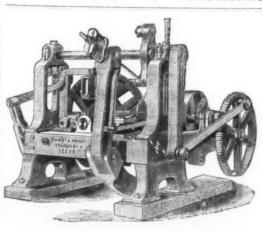
THE DIAMOND ROCK BORING COMPANY (LIMITED).

CONTRACTORS, ARTESIAN WELL BORERS, AND SINKERS.

GOLD MEDAL FOR ROCK BORING MACHINERY EXHIBITION, 1873.

This company now undertake the sinking of Artesian Wells. Their system rivals all others, both for efficiency and speed, and in addition produces "Solid Cores" from the Rocks bored through, thus giving invaluable evidence of the strata passed through as the work progresses.—Vide Brewers' Journal, Cotober, 1376, and other papers.

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A1 PATENT BRICK MACHINE.

Massive; durable; cheap; takes little power, and gives PERFECT SATISFACTION.

This is the ONLY Machine which presses the Brick equally on BOTH sides, each plunger entering the mould plate § in., and turning out 12,000 SQUARE, SOLID, PRESSED Bricks per day, READY AT ONCE FOR THE KILN.

SOLE MAKERS—

YEADON AND CO.,

CROWN POINT FOUNDRY, LEEDS. Makers of EVERY DESCRIPTION of Colliery and Brick Yard

Plant. LONDON AGENTS—
HAUGHTON AND CO., No. 122, CANNON STREET, E.C.
CONTINENTAL AGENTS—
PLAMBECK AND DARKIN, 171, QUEEN VICTORIA ST., E.C.

WAST

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Patent !

Euro Asia Afri Ame Aust

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ment of

Original Correspondence.

WASTE OF SMALL COAL-PATENT FUEL-No. IV.

WASTE OF SMALL COAL—PATENT FUEL—No. IV.

Sin,—Before dismissing completely this subject I think the enclosed particulars, which I received lately, may prove interesting to deed particulars, which I received lately, may prove interesting to four readers, having as it has a great bearing on the choice of fuel, but when the most important public institutions in France, is most one of the most important public institutions in France, is most most in its mode of dealing with tenders for the supply of fuel, attended in the most important public institutions in France, is most one dealers of the supply of fuel, attended in the most included in the dealers of the supply of fuel, attended in the dealers of the supply of fuel, attended in the heating lowest cost? There is a great difference, of course, in the heating lowest cost? There is a great difference, of course, in the heating lowest cost? There is a great difference, of course, in the heating lowest cost, and which they come, varying from 5 to 9 in evaporative power, and which they come, varying from 5 to 9 in evaporative power, and which they come, varying from 5 to 9 in evaporative power, and which they come, varying from 5 to 9 in evaporative power, and which they come, varying from 5 to 9 in evaporative power, and which they come, varying from 5 to 9 in evaporative power, and which they come, varying from 5 to 9 in evaporative power, and which they come, varying from 5 to 9 in evaporative power, and which they come, varying from 5 to 9 in evaporative power, and which they come, varying from 5 to 9 in evaporative power, and which they come, varying from 5 to 9 in evaporative power, and which they come, varying from 5 to 9 in evaporative power, and which they come, varying from 5 to 9 in evaporative power, and they come, varying from 5 to 9 in evaporative power, and they come, varying from 5 to 9 in evaporative power, and they come, varying from 5 to 9 in evaporative power, and they come, varying from 5 to 9 in evaporative power, and they come, varying from 5 t in each of the four years given :-Price. Steam Cost per 1868,

	,000,				produced	. 1	on.
Totant Fuel	Combustibles.		1.				t. c.
Metropolitan Patent Fuel	Combustibles. Glyncorrwg coal fuel				9.20*		
Company		***	91	0	7.848	***	9 05
	Montgean tuet				7.134		
Pargel 198	22 Mal le Absensel -		30	0	1.134	*** 1	20.0
Brodu	English coals, through a	nq		4.00	W-000		
Block					7.222		
Lefrançais					5 900		
Donard	Ditto				5.689		
Donand Goddard and Coquard	Fuel, Cardiff coal		29	95	7.074		4 23.3
Goddard and Coquation	1000						
	1869.						
Patent Fuel							
Metropolitan Patent Fuel	Glyncorrwg small coal fuel		32	20	9:20	5	8 05
	Montjean fuel		31	25	8.716		3 58-5
	Cardiff large coal				7 519		
ESLECTION	Fuel, Cardiff coal				7.490		
mitto	Fuel, Cardin coal						
Leboterf	English coal "Lewis"				6.709		
Goddard and Coquard	Warlick's fuel				7.7:9		
Ditto	Cardiff fuel		28	0	7.378	?	3 91
Ditto	1070						
	1870.						
Metropolitan Patent Fu el							
0	GOVERNMENT STREET		32	0	9.20		3 0.1
et accelon	Montiean fuel		29	95	7.840	:	8 69.3
Pergeline	English coal fuel		28	0	6:580		4 25
Goddard and Coquard	Ditto	***			6.383		
Goddard and Coquard	27110 111 111 111 111	***		0	0 000		
	1871.						
Patent Fuel							
Metropolitan Patent Fuel	Clancours amall and fuel		91	90	0.00		11
Сотрану	Glyncorrwg small coal fuel	***	31	30)	9.20	6	3 15
Hensschen	Montjean fuel		20	0.0	7.407	***	# 09.9
Pergeline	Cardiff coal fuel		30	0	6.791	*** 1	4 41.7
Goddard and Coquard	Ditto		29	0 .	6.620	4	37 9
. It appears by the	dmiralty reports of trials at	Po	rtai	nou	th that	this	
Glyncorrwg	fuel is smokeless 95 minutes	m	eve	ry	100.		
Those figures show th	at the prices paid for	H.	1119	ach	un'a fu	la	have
These nguies andw ch	a select be others while		AL	500	1011 3 10		TILE A C
always exceeded thos	e asked by others, whil	at	th	0	cost of	81	mres
ber his was	lowent but had the Mot	10.00	21	160	m Date	4	Donal

oduced by his was lowest, but had the Metropolitan Patent Fuel impany tendered at the prices above named they would, no doubt, n accepted.

when the distribution of the grates or bars of the furnaces which when the character of the grates or bars of the furnaces which readapted to the use of fuel, though easily convertible. Many goofs have been furnished lately that the Metropolitan Patent Fuel the most powerful steam producer known, and at a higher price er ton than the very best would still be found the most economical.

Old Vicarage House, Greenwich.

RAILWAYS, AND THEIR INFLUENCE ON COMMERCE, AND IN THE DEVELOPMENT OF COUNTRIES.

Sm.—The following list, compiled by Dr. Stürmer, of Germany, asybetaken as the approximate length of railways in operation in sch country at the end of 1874. The lengths having been stated in illometres were reduced to miles, a kilometre being 10936 yards:—

PE-88	3,735 MILES.	
16,596 17,370 13,413 11,522 10,792 4,777 3,602 2,465 2,162 A—76 6,488 82	Switzerland Miles Netherlands and Luxemburg Turkey Denmark Roumania Portugal Norway Greece 4 MILES, Asia Minor Miles Java	1,297 1,178 955 784 766 640 310 7
624	Japan	38
334 67	Tunis	89 37
ICA-8	3,209 MILES.	
74,454 4,106 984 962 831 616 398 377 189	British Guano Miles Honduras Panama Panama Paraquay Costa Rica Jamaica Bolivar Venezuela	6 - 56 47 45 19 27 20 8
ALIA-	-1755 MILES.	
438 263 196 se in ra 865. 6695 460	West Australia Tahiti Tahiti New Zealand ailway formation in ten year 1870. 1875. 64,463 88,733 5,053 7,644 1,101 1,455	3
	16,695 13,413 11,522 19,792 2,465 2,162 6,488 6,588 6,698 6,	17,370 Netherlands and Luxemburg. 13,413 Turkey. 11,522 Denmark. 19,792 Rommania. 4,777 Portugal. 3,692 Norway. 2,465 Greece. 2,162 2,465 Greece. 2,162 6,488 Asia Minor. Miles. 6,488 Asia Minor. Miles. 624 Japan. CA.—1453 MILES. 648 Japan. CA.—1453 MILES. 641 Japan. CA.—1453 MILES. 67 ICA.—83,209 MILES. 74,454 British Guano. Miles. 4,105 Honduras. 962 Panama. 962 Panama. 963 Panama. 963 Panama. 964 Panama. 965 Taymania. 189 ALIA.—1755 MILES. 561 Taymania. Miles. 438 West Australia. 263 Tahiti. 196 New Zealand. 263 Tahiti. 196 New Zealand. 2643 S8,737 4,650 5,053 7,644

...... 182,796 These tables must be taken subject to explanation. Most of the sliways in Great Britain have double lines, and, in some cases, usdruple lines, where the traffic is great. Many of the railways a the United States have a single line only over a considerable part flair length. The considerable part their length. The same will apply to n any railways in An and to other countries where they have recently been introduced, as in asia and Africa, the gauge in some cases being much narrower than the ordinary British gauge; it is understood, however, that the best are locomotive lines, either for passenger or mineral traffic, or both.

Total Miles 90,168 131,641 .

E.

S.

The effect of the general introduction of railways throughout The effect of the general introduction of railways throughout freat Britain may be stated to be the immense amount of travelling they occasion, the rapid growth of postal communication, the interchange of commodities between one district and another (by reason of the facilities they afford for the carriage of those commodities), and the development of the mineral wealth of the kingdom. Fields of cal, ironstone, limestone, and sandstone have been opened, which, but for the existence of the railway and locomotive, might have remained untouched for axes to come. It is feared that this developout for the existence of the railway and locomotive, might have remained untouched for ages to come. It is feared that this development of minerals has of late been proceeding at too rapid a rate. Capital and railway accomodation have not been wanting to furnish supplies of mineral for the future. Unhappily, the demand has not kept pace with the powers of production that now exist in the country. From some cause, not sufficiently explained, the iron trade of this country has been in a declining state for three years or more—one reason, no doubt, is the unsettled condition of the rail manu-

facture. We are expeceing great things from the use of steel rails and steel-headed rails in lieu of iron, and as the cost of steel rails is facture. We are expeceing great things from the use of steel rails and steel-headed rails in lieu of iron, and as the cost of steel rails is not now much greater than iron, and perhaps on a par with the best iron ones, users of rails seem to be holding back and awaiting the results of experimental tests as to the relative value of iron and steel rails for durability and safety. A rail of the best homogeneous iron is perhaps more to be relied on than a steel rail, though the latter may have extreme hardness as its chief characteristic. It is the question of cheap steel rails versus ordinary piled rails which unsettles the iron manufacture, and has brought it to a very low rate of production in this particular branch of it. The limited production has affected injuriously the coal trade of the country, inducing a loosened demand for steam and manufacturing coal, quite sufficient to account for the present depression of prices and the lessened output of coal. It might be expected that railway interests would suffer in common with others, but this is only partially so, as railway dividends will show; and, when we consider the regular increase of passenger traffic, their rates for minerals almost unaltered, and the payments all in cash, not fluctuating with the good and bad times as other trades do, we are led to say that railways are good investments, and in new countries having rich minerals in store cannot fail eventually to succeed.

Railways are the pioneers to civilisation; if one-half the amount that is expended on the absurdity of standing armies in Europe were expended on the advalcament of new countries having rich minerals cannot fail eventually to succeed.

Railways are the pioneers to civilisation; if one-nair the amount that is expended on the absurdity of standing armies in Europe were expended on the development of new countries by the introduction of railways for that purpose the Continent of Africa might by this means be explored, its wealth developed, and the healthy parts colonised from the overabundant populations of Europe. Australia, New Guiana, Siberia, and some other parts of Asia also hold out inducements for efforts of this kind, which could only be effected by the possessors of large capital. The produce of those countries—both land and mineral—would come in exchange for the commodities of Europe—thus capital and labour would both find employment, the carrying trade on sea and land would be largely benefited, and labour

generally have more scope and better reward.

It is with some confidence I offer these suggestions for colonising
African and other almost equally unknown regions, known, perhaps, African and other almost equally unknown regions, known, perhaps, only to solitary travellers, toiling over marshes and uncultivated tracts, which nothing but the introduction of the railway can make accessible and bring into profitable use. Undertakings like these would be objects worthy of the merchant princes of England to accomplish, subjugating countries not by fire and the sword, but by the introduction of railways; commerce and the arts of peace would follow in their train.

On looking over the list of countries it will be observed that some have but short distances of railway open, and others—as China—have scarcely adopted the railway system. Let us hope this will prove a great benefit to the country, and lead to its general adoption, and the iron rail and other trades dependent on it may hereafter enjoy a more healthy existence.

Some years ago Mr. T. E. Harrison, engineer for the North-Eastern Railway, estimated the duration of iron rails to be about nine years.

Some years ago Mr. T. E. Harrison, engineer for the North-Eastern Railway, estimated the duration of iron rails to be about nine years. Assuming four-lifths of the British lines to be double, there will be 30.052 miles of single line laying, and every year for the next nine years 3340 miles of rails, either of iron or steel, would be required for replacing worn-out ones. Reckoning a mile of rails to be 125 tons weight this would give 417,500 tons of rails in each year to be supplied, and chairs and fastenings in proportion to these. Railways are being constructed in Italy from Rome to Naples, in Russia, New Z-aland, and other parts of the world, so that with the requirements for new lines, and the renewals for home railways, the trade should not long be in the state of depression in which it is at the present time.

MCKEAN'S ROCK DRILL.

McKEAN'S ROCK DRILL.

Sir,—I trust that many of your regular readers have perused the long and interesting account by Sir George Denys, Bart., in last Saturday's Journal, of the success that has attended his use of McKean's Rock Drill.

It has been successfully put to work as many know, by Capt. Wm. Skewis, of Tavistock, and myself in West Maria and Fortescus Consols, the mine immediately adjoining Devon Great Consols to the west, and I am glad to say that a set of three to sink a shaft and drive cross-cuts will ere long be at work in South Roskear, the mine immediately adjoining Dolcoth to the north, so our friends Messrs. Loam and Son will not long be able to say that the Barrow Drill is the only one ever successfully worked in Cornwall.

Capt. Skewis or I shall be very happy to give every facility for viewing the rock drill already at work.

J. Currie Gregory.

85, Gracechurch-street, London, April 16.

MINING IN NEWFOUNDLAND.

Sin.—At a time like the present, when it is seriously proposed by one of our miners' advocates, Mr. Macdonald, M.P., that some 20,000 of the more youthful of them should forthwith emigrate to an indefinite somewhere in Western America, with the chance of obtaining remunerative employment, I cannot refrain from noticing that the proposition might be made a good deal more definite by pointing at once to Eastern America instead, and to that portion of it known as

proposition might be made a good deal more definite by pointing at once to Eastern America instead, and to that portion of it known as Newfoundland, having an area of 42,000 square miles, and only 159,000 inhabitants altogether, and these mostly along the coast line.

I am induced to this after perusing the letter, signed "J. B.," in the Supplement to last week's Journal. I have never visited that colony, and am not at all likely to go there. But about 10 years ago Mr. Murray, F.G.S., who has charge of the Geological Survey of Newfoundland, was in London, and that gentleman fully convinced me then that if certain "red tape" and other governmental obstacles then existing were removed, metal mining in Newfoundland might become reasonably profitable. One copper mine since then has certainly turned out very satisfactorily.

In 1875 a friend from St. John's, Newfoundland, brought me over some remarkable specimens of lead ores for my cabinet, and three big lumps of copper pyrites, assaying severally 6, 11, and 15 per cent. for copper. He also gave me a copy of Mr. Murray's elaborate report to the Colonial Government: this very interesting and important report I cannot find at the moment to quote from, touching the then existing obstructions to the opening up of the colony. Last year Mr. Stanford, of Charing Gross, published a capital little book of 75 pages, entitled "Geography of Newfoundland." by James P. Howley, Assistant Geological Surveyor. Under the heading "Geology," p. 45, I find that the geological systems known to exist in Newfoundland are the carboniferous, Devonian, middle and lower silurian, huronian, and Laurentian, the latter spreading over nearly two-thirds of the island. Under the heading "Economics," p. 49, are catalogued nativegold, silver, and copper, silver-lead and nickel ores, grey, yellow, and variegated copper ores, magnetic, chronic, specular, and hematite iron ores, iron pyrites, ironsand, and Vivianite, zinc and manganese ores, molybdena, c. al, limestone, marbles, barytes, gypsum, kaolin, sandstone, whetstone, asbestos, staatite, petroleum, &c. This is not at all an unattractive bill of fare in a healthy, English speaking, untried British colony within seven days' steaming from Liverpool every fortnight, where bread, and butter, and beef are about half the ce they are with us.
Your correspondent in St. John's writes that "the whole country

is thrown open for settlement now." Obstacles heretofore in the way are, in fact, removed. The Mother Country has recently sent out a Governor, who has already, I hear, intelligently thrown out suggestions for beneficial alterations, some of which he is empowered to direct. The legislators are by no means slow at passing wholesome Bills through their Parliament. The money making inhabitants of St. John's are by no means niggardly in the way of finding funds for colonial improvements. These facts make just all the difference for colonial improvements. These facts make just all the difference as regards capital flowing from this side the Atlantic into Newfoundland mining enterprise. Of course, it will be asked, Why do not the rich men of St. John's themselves go and dig for minerals? One answer may be given to this, perhaps, is that they cannot dig; another in the more agreeable fact to them that they have not knocked on the head all the seals in the sea just yet. The "ile" struck there a long while ago has been running in almost a continuous full stream ever since, and so long as this source of profitable adventure lasts,

with its periodic excitement, just as long are the moneyed men of St. John's likely to "let well alone," and stand by their own craft.

Two important facts at "Home" (as the islanders always cell this country)—a surplus of miners, and a surfeit of unemployed capital waiting investment—suggest the idea to those who feel inclined for the enterprise of shying a few thousands across the water under judicious and skilful management in the way of prospecting at the chief points of the island.

Every facility will be readily afforded Lam told by the Govern-

chief points of the island.

Every facility will be readily afforded, I am told, by the Government officials. Metals, when found and made notes of, may be had in Government "setts" for the asking, and no premiums have to be paid. The island for the most part is not vulgarised by townships, parochial boundaries, &c. Hospitality prevails everywhere. Fish in season is "no price," and "game" may be had for the killing. Could not some of our poor miners find work to do in such a country, and will not somebody kindly help them to it?

Tuebrook, Liverpool, April 19.

T. A. READWIN, F.G.S.

THE THARSIS COMPANY-THE DIVIDEND.

Sin,—The report of the directors, just issued, proposes to pay a dividend of 20 per cent. Considerable curiosity has been expressed to know how, during a time of so great depression in the products of their business, such large profits have been made. Their report does not clear the mystery. As compared with last year it states there is a large or there is a loss on-

burden account.
On the other side of the account there is an increase of 1627 tons refined copper (say) at a profit of 20%, per ton

since when about 3000 tons have been made. This is a serious lose to the company for the current year.

Iron ore is said to be all sold, but at what price? Iron has not been so low for ten years. The prospects of the company seem gloomy in the extreme, and how, with such a serious depreciation in the value of their products, and according to the report of the directors about 124,000%, have to be accounted for, they manage to pay a 20 per cent. dividend, whereas there only appears something like 10 per cent, at the very outside.

PYRITES.

ke 10 per cent. at the very outside.

Glasgow, April 17.

CALIFORNIAN MINES-COMSTOCK LODE.

SIR,—It is amusing, if nothing else, to read the amount of twaddle in your Mining and Stock Exchange news as to this lode. One would fancy, to read them, that every mine was a prize. Professor Raymond's official reports are quoted as to the enormous yield. I sometimes wonder, do the writers in the Journal believe all they write? It is true that much riches have been got from the Comstock lode, but according to information I have, only four out of fifteen of these mines pay, the rest of them are hoping almost against hope of reaching something that will pay, thus—

Output 1700 ft. deep.

0.		1700 ft. deep		Pays.
C,		1500		Pays.
C.			***************************************	
			ough other mines	Don't pay.
			good mine	
S.	************	2300 ft. deep		Don't pay.
				Don't pay much.
				Don't pay much.
A.				Don't pay.
I.	**********	2300 ft. deep		Don't pay.
Y.		2000		Don't pay.
K.				Don't pay.
			used to be a good a	
				Pays.
pe	Englishm	en will pond	er before sending	their money there.
				PACCENTAGE

AUSTRALIAN GOLD COMPANIES.

Sir,—In last week's Journal Mr. Dicker, who introduced the Golden Crown, Imperial Crown, Mariner's Reef, Australian Mines Investment Company, Sir John Moore, London and St. Arnaud, and the Winter's Freehold Mines, and edited a Gazette, writes in defence of his conduct. As an investor I should like him to furnish, through your medium, some information as to the above companies:—

1.—What sum was naid to the vendor for the interest in the

1.—What sum was paid to the vendor for the interest in the Golden Crown Company, as registered in England, and what dividends have accrued since such registration? and why, if the company exists, has not the meeting of the shareholders been convened, and some regard been shown by a periodical statement to the unfortunate holders as to the working of the mine?

2.—Why should the shareholders in the Imperial Crown be kept

2.—Why should the shareholders in the Imperial Crown be kept in the dark as to the progress of this undertaking?

3.—Let anyone refor to Mr. Dicker's Gazettes, published 1871 to 1874, and peruse them carefully as to the extraordinary statements respecting the value of the Mariner's Reef Mine, and what disappointments have been met with as to any return. Last year a circular was issued stating that the mine had been sold, but the shareholders in England might secure it on the payment of a certain sum; accordingly a meeting was convened, the amount subscribed, and the mine secured, as well as from what the shareholders were told at the meeting sufficient means to open up and develope the property. It was announced that it was a valuable property, and we, as shareholders, were congratulated on securing it at a sum one-sixth of its value in machinery alone. Twelve months have elapsed, and no tidings in any form furnished.

4.—Perhaps Mr. Dicker will furnish a full and complete state-

and no tidings in any form furnished.

4.—Perhaps Mr. Dicker will furnish a full and complete statement of the cost of purchase on each mine forming the Australian Mines Investment Company; the dividends paid since its formation; the legal costs, commission to himself and his agent abroad; the amount of dividends paid to the shareholders; the office expenses in London; board of management, which really Mr. Dicker personally represents, judging from his allusion as to the buying of the interests in the several mines under the above head. And further, perhaps he will enlighten us as to what calls have been met, as many of the companies may not have fully paid-up shares; and generally state the prospects of the concern with its two or five dividend-paying items, which no doubt will barely pay directors' fees. office paying items, which no doubt will barely pay directors' fees, office expenses, &c.

expenses, &c.

5.—The Sir John Moore affair, I fear, will not bear investigation, being one of those transactions which Mr. Dicker ought to have enquired into before he recommended his clients to invest in it.

6.—The London and St. Arnaud and Winter's Freehold Companies

have been, no doubt, fairly proved, but the returns not realising expectations have caused the shareholders to despond.

Now, the simple facts are these: The shareholders have, through

Mr. Dicker's Gazette, invested in the mines enumerated, and expected, he being a gentleman well versed in Australian mining, a return commensurate with, as he terms it, a fair mining risk. That not being arrived at, and no information afforded as to the progress or otherwise of the ventures, although Mr. Dicker must have had advices, the shareholders naturally have said—We have been deceived, and better not throw good money after bad, or support him again, es everything has turned out such unfortunate failures. Mr. Dicker alone knows the mines their situation, &c., and ought, as he has had advices, to have made them public, like all legitimate mining companies do. Probably Mr. Dicker, finding advices bad, might have sold his interest in various ventures, and advised his interest in various ventures, and advised his interest on various ventures, and advised his interest on will be made into the method of conducting the several companies, and that Mr. Dicker will furnish a succinct account of each undertaking, with its prospects, and recommend such a system of re-organisation and advices from time to time as will be accounted to the clients. There can be no question as to Mr. Dicker's acceptable to his clients. There can be no question as to Mr. Dicker's

ability or acquaintance with mining generally, but he ought in common fairness, as the sole representative and adviser in England, to keep his clients well informed, and the shareholders' meetings convened regularly. AN INVESTOR.

WATER-WHEELS.

WATER-WHEELS.

Str.,—Referring to the letter of "Enquirer" in the Journal of April 14, I should imagine there must be a printer's error as to a turbine wheel forty feet diameter. Turbines are not made of this diameter, or of a size at all approaching to it. I bave a good turbine, made under Schiele's patent by the North Moor Foundry Company, which was supplied by them to develope 25 horse power, under a head of water 14 ft. high. The turbine wheel is 2 ft. 6 in. diamet-r and 1 ft. 8 in. wide, and by increasing the head of water about 4 ft. the machine could be made equal to a water-wheel 40 ft. × 4 ft. This turbine is valued at 53l. on rail here.

Llandloes, April 16.

ENGLAND AND HER HOME INDUSTRING

ENGLAND, AND HER HOME INDUSTRIES.

SIR.—That we shall have war at an early date is now certain, and the consequences looming in the distance are most significant and momentous to England. That the Czar will master, and far less over-run. Turkey is extremely doubtful, yet, should he succeed, Austria and England would come in for most of the spoil—the fair fields of Turkey would in case of disruption be annexed to Austria, and Constantinople, with the Basaborus and the Dardanglas race and Constantinople, with the Bosphorus and the Durdanelles, pass on to England. We require no other territory so long as Egypt becomes an independent kingdom and the Kuedive remains our friend. All that we can desire is the command of the Medterranean against the aggressive power of Russia acting in the Black Sea. We acquired an interest in the Sucz Cand, and, shou'd we be required to assist the Turk, why not a dvance money on the material security of Constantinople, and in case of Turkish default or disinterest we could be presented to the control of the tegration we could by mutual agreement hypothecate the city and fortifications.

is now time that we should look after our interests at home, and examine somewhat in detail and earnestly the securities we possess. In the first place, the surface of the earth produces the sustance for man and animal creation, but the fruition of the land cannot be obtained excepting through the "sweat of the brow" sess. In the first piace, the surface of the fruition of the land cannot be obtained excepting through the "sweat of the brow" and the "labour of the hands." Industry and sinews are indispensable to bring forth the fruits of the s.il. So likewise the hidden wealth of the earth would lie dormant and undeveloped without the rid of enterprise and the persevering industry and application of aid of enterprise, and the persevering industry and application of labour by the hard-working and hopeful miner, whose energies no obstacle can daunt or difficulty deter in his earnest search for the wealth contained in the mineral chambers below the surface. These from time to time are laid open, and the discovery of one deposit after another show that, notwithstanding all our past products and returns, the future shows no signs of even approaching exhaustion,

but on the contravy, so far as lead is concerned, the very reverse.

For the year 1875, published in December last, Durham and Northumbe land yielded 22,304 tons of dressed ore; Montgomeryshire, 8940; Shropshire, 7923; Cardiganshire, 5835; Isle of Man, 4429; Scotland, 4109; Yorkshire, 4050; the total production of the United Kingdom being 77,746 tons, containing 57,435 tons of metal and 487,358 ozs of silver, the value of the two ores being 1,024,107/, to the miner and the mortal to the contraversal of the two ores being 1,024, 107/. to the miner, and the metals to the smelter were valued at 1,298,463, and 127,389% respectively. However, to show the importance of the mineral products of the United Kingdom, we may observe that the mineral products of the United Kingdom, we may observe that for the year referred to the aggregate value to the miner was valued at 57,333,0134. To realise this sum the products were—coal.131,807,105 tons; iron ore, 15,821,080 tons; copper ore, 71,528 tons; tin ore, 13,996; lead ore, 77,746; zinc ore, 23,978; iron pyrites, 48,036; arsenic, 5961; manganese, 3205; ocre and unber, 5315; wolfram and tung-tat-, 46; plumbago, 20; fluor-par, 350; clay-, 3008,444; cil shal-s, 442,333; salt, 2,316,644; barytes, 15,549; and copproties, 250,122 tons. Thus we must conclude that agriculture and mining are the sources from which spring all our wealth. The fruition of the earth at surface and underground gives rise to all our manufacture, enterprise, trade, and commerce. The first is necessary to Sections of the earth at surface and underground gives rise to an our manufacture, enterprise, trade, and commerce. The first is necessary to the existence of mankind, and the latter is indispensable to every branch of social prosperity, manufacturing and commercial expansion, and the main spring of England's material we dth.

The Engister Canada has furnished his assual supposes for

sion, and the main spring of England's material we due.

The Registrar General has furnished his annual summary for The Registrar-General has furnished his acquait summary for the year 1876. London, within the present bills of mortality, had an estimated population of 3,489428 souls within its limits, and greater London, extending 15 miles around the centre, has 4,286607. Of this wast population more than one moiety aged 20 and upwards were born out of London. For the year 1876 the births were 127,014 and the danths 77.411, the number of male compared with familiar in the contraction. eaths 77,411; the number of males compared with females i 100 to 114. London is not only self-sustaining, but self-multiplying, and it sends out swarms of its children to other parts. The main density of the population to an acre in all London was 41 persons in 1871, as again-t 25 in the year 1841, or an increase of 64 per cent. In the three decades. As the metropolis produces no grain, vegetables nor fruits, mait nor meat, fish nor fowl, neither wool, flax, extron, nor silk, every article of ford and clothing its millions consume has to be imported as well as the tay surge offer and wine sume has to be imported, as well as the tea, suzar, coffee, and win from tropical or distant climates. The bricks of its houses may have sume has to be imported, as well as the ten, sugar, coffee, and wine from tropical or distant climates. The bricks of its houses may have been dug out of its clay, but the wood of its flower, rathers, and furniture, the metals, and the very stones of the streets, have been imported, and what is more, all those articles—coal and fuel, and every other product in the shape of raw materials in various stages of manufacture or finished for use, have been paid for from the products of industry, coupled with the gains of trade, manufacture, and commerce. The greater part of the inhabitants are, no doubt, engaged in reciprocally supplying each other's wants, but the products of industry, coupled facture, and commerce. The greater part of the inhabitants are, no doubt, engaged in reciprocally supplying each other's wants, but their industry, skill, and services to others without its borders—in the United Kingdom, the colonies, and abroad—are unquestionably the United Kingdom, the colonies, and abroad—are unquestionably assurance was the extended revenues and the accumulations. tion of rapid wealth.

In the construction and creation of our railroads a sum is involved In the construction and creation of our railroads a sum is involved of 600,000 00000, which produces a revenue in round numbers of 55,000,0000 annually. Of this sum about 22,000,0000 are gains, and 33,000,0000 cost of fuel, material, and maintenance, hence the profits average about 3t. 13s. 4d. per cent. only. The labour department involves some 280,000 employees, of whom about 140,000 are en-

ment involves some 280,000 employees, of whom about 140,000 are engaged in the locomotive department of goods, manufacture, and of minerals and earths, coupled with metals and products of all kinds associated with the trade and commerce and the constructive enterprise of the nation. This vast revenue of 55,000,000.—wholy distributed in dividends and expenditure—aprings from the industry of the country, and is wholly retained in the Mother Country.

The water supply to London is distributed by the several companies at a cust of 1,197,307., of which 445,7682, is absorbed in working expenses, and 751,5382, accrues as profits on capital—i.e., at the average rate of 65 per cent. on the money subscribed. The costs of coal in the manufacture of gas is 2,650,2842, including the supply through meters. The working expenses are 2,506,0612, but against this charge the companies get 780,7812 from the sales of coke and other sources, which augment the revenue to 3,431,0654. coke and other sources, which augment the revenue to 3.431,065/. Of this sum 925,000% are gains, and the balance expenditure. The aggregate capital engaged in the supply of water and gas amounts to 22,492,157%, and the joint profits 1,676,542%, equal to 7½ per cent.

on the gross capital subscribed.

The most certain dividend mines upon the tapis are—Roman Gravels, 128 to 134; the dividend in March was 8s. 6d. a share, and Gravels, 123 to 124; the dividend in March was 8s. 6d. a share, and three of the same amount were declared during the year 1876. Tankerville, 8½ to 83; the dividend in March was 5s. a share, and three of like amount in 1876. Van, 35 to 36; dividend 16s. quarterly. Great Laxey, 21 to 22; dividend 10s. quarterly. Minera, 20; the last four dividends—May, 1876. to February, 1877—were 8s., 10s, 7s., and 8s. respectively. South Caradon, 125 to 130; the last quarterly dividend was 3d. a share, and for the year 1876-7 the four dividends amounted to 8d. a share. West Tolgus, 60 to 65; dividends for the past year 5d. a share. West Chiverton, 16½ to 17½; last quarterly dividend was 36 a share, and for the year 1040-1 the four dividends amounted to 86 a share. West Tolgus, 60 to 65; dividends for the past year 56 a share. West Chiverton, 16½ to 17½; the dividends for 1875 were 78, 6d, and 128, 6d.; for 1876, 10s.; and in January last 104 was declared. A loss of 1200% has just been sustained through the stoppage of a lead smelting company, hence at the approaching audit the profits will necessarily become reduced although the output shows no fulling off. duced, although the output shows no falling off.

As to progressive mines, there can be no question as to the promise and probable early expansion of Monydd Gorddu, Van Consols, Grogwinion, Penstruthal, Cathedral, South Condurrow, Glenroy, Mellanear, Cargoll, West Pateley Bridge, West Seton, and Leadhills. These mines possess all the elements of early and substantial success, time and money having been expended in development and in making discovaries, which prove their inherent worth, and the

success, time and money having been expended in development and in making disc veries, which prove their inherent worth, and the established certainty of prospective prosperity.

We restrict this letter to a few comments on mines, water and gas companies, and railways. At some future date we shall refer to insurance, banking, fluance, manufacturing, telegraph, docks, canals, Board of Works and City loans, land, shipping, building, tram, trusts, and miscellaneous enterprises and companies. But suffice for the present; already I have sadly trespassed upon your R. Tardinnick. valuable space.

81, Bishopsgate-street, April 19.

Consulting Mining Engineer

PATELEY BRIDGE MINE.

SIR,-It must be gratifying to the shareholders to see this pro-STR,—It must be gratifying to the shareholders to see this property fulfilling the most sanguine expectations, excepting that a little more time is required to develope it than was at first anticipated. I think the shareholders would now strongly object to the issuing of the unallotted shares below par. Should the special report expected be favourable, which I have no doubt will be the case, I think it would not be difficult to raise a few thousand pounds in debentures for a few years. It would be manifestly unfair to allow others to come in and reap superior advantages, when some of us took shares at par, and many others bought at a premium.

A SHAREHOLDER.

A SHAREHOLDER.

PRINCE OF WALES MINE.

SIR,-The present shareho'ders are carrying on this mine with apparently poor prospects, and it deserves consideration whether a change of plan might not be advisable. Great hopes have from time to time been centered upon this adventure. Once it was expected to afford abundant riches in silver, at another in arsenic, and again in tin. So sanguine were the expectations as to tin that a large sum of money was laid out in dressing-floors and other appuricanees, for a considerable trade. purtenances, for a considerable trade. No sooner was this expenditure completed than the tin-bearing levels were abandoned, and have never since been worked. This abandonment was determined on in confequence of the engine-power not being equal to the working at deep levels. But it was a great misfortune for the share holders to cease working the 90 fm. level when it was worth 201. a om, and improving.

The mine, in fact, is not now having a fair chance, and what is and allow exploration to go on in the 90 and lower levels, where it is already proved there are riches. To do this I purpose that the company should be reconstituted as a limited liability concern, and should in the scheme of reconstruction provide funds for a n-w en-gine and further trials in depth. There are at present 8000 effective shares, and if the new company were constituted in as many shares of 1L each the old-shareholders might be purchased out by an ex-change of four old shares for one new one, having then fully-paid shares, or four old shares for two new ones, leaving a calling margin of 10s. per shares. After thus buying the mine as a gaing concern the new company would have a capital to call of 6000l., of which 2000l. might be appropriated for the engine and fixing of same, and the remainder for working expenses. This scheme, if carried out, would give a reasonable prospect of profit, which might induce new capital to come in, and would improve the position of the present proprietary by giving them a mine with hope and vitality in it instead of the present drugging condition of affairs. Shareholders favourable to the proposed change should at once communicate to the secretary, so that the subject may have attention at the forthcoming meeting. at the forthcoming meeting. A SHAREHOLDER.

MINING IN CARDIGANSHIRE-MONYDD GORDDU.

MINING IN CARDIGANSHIRE—MONYDD GORDDU.

Sir,—Cardiganshire lead mines, especially in the Aberystwith district, have decidedly much improved within the last month or so, and it is notable that the mines in which the most important discoveries have been made are those working in the same bearing rock on parallel lo les north and south, and their situation is not far distant longitudinally. The mines so situated, and in which the most important discoveries have been made, are Frongoch, East Darren, and Monydd Gorldu. Great improvements have taken place in several others close by, but not of equal magnitude Frongoch, East Darren, and Penrhiw are old mines; the two first are among the best mines of Cardiganshire, and the deepest, and although they have not been so prosperous for some time as they once were, I believe, if they continue the points from whence they have got their returns, prosperity is equally certain for the future as in the past. Monydl Gorddu is a very young mine, only commenced to work in earnest about two years ago, and only 35 fms deep from surface. Their returns have been very regular, and well nigh paid the working cost, which looks well for so young a mine. The discovery they made at the bottom of the mine last week, judging from the beautiful rocks of lead I saw on the floors, must be of the greatest importance. It is the principal talk of all mining rocks of the greatest importance. It is the principal talk of all mining rocks agust and Lern teld there is a recover near the process of the presents of the presents of the process of the presents of the p the greatest importance. It is the principal talk of all mining le about, and I am told there is every prospect of its continuad, if so, a little time to open it will place them from paying to profit. I wish them every success, because if this should I wish them every success, because if this prove well it will be the means, probably, of putting life into Elgar on the same lodes immediately to the west, and Court Grangs, immediately to the south, and there is a good sett to the east of Monyde Gorddu, on the same lode, where trials have been made, and ad found of a very similar description to that discovered at Monydd orddu, and I believe the sett will ere long command attention, and also others on the same champion lodes, to which I may refer

CARDIGANSHIRE MINES, A.D. 1877-No. XII.

SIR,—In my last I promised to commence my remarks this week about the Cwm Erfin Mine, being midway between the Goginan and the South Darren Mine, the former of which has been worked some 80 fms., and the latter about 60 fms. deeper than the Cwm Erfin Mine. I have before stated that the ore found in the deepest levels at South Darren is very much richer than in any of the levels, and as the minestands in the same valley as Cwm Erfin there can be no doubt in the mind of any miner, or even to anyone not practically acquainted with mining, that the same result will obtained at Cwm Eifin as has been obtained at South Darren. ootained at cwm Einn as has been obtained at south Darren. In fact, if you were to select a property where you might expect a rich and practically inexhaustible mine I should say that spot would be Cwm Eifin. I have stated that it stands in the centre of Goginan, which has yielded upwards of 1,000,000% worth of silver-lead ore, and the South Darren, which has yielded from 300,000% to 400,000%. worth of rich silver-lead ore, but it has also for its nearest neighbour to the north of it the East Darren, which is nearly 100 fms. deeper than Cwm Erfin Mine, and has yielded nearly, if not quite, 2,000,000. sterling of lead and silver, whilst Cwm Erfin, the shallowest of them, has yielded 800,000. worth of silver-lead ores. For the last 20 years the engine shaft was never sunk a foot, but, on the contrary, as the ore was worked away from level to level the water was allowed to rise and this method was pursued and perwater was allowed to rise, and this method was pursued and persisted in until the mine was supposed to be robbed of all its discovered treasures, and in the few last years of its working between 30,0000, and 40,0000, were given in dividends, which continued to the last day of the last company's holdings, since which the mine has been worked by the much respected owner—Mr. Jones, of Llwyng Gross—who realised some profit from its working. Mr. Llwyny Groes—who realised some profit from its working. Mr. Jones has now made arrangements with a most influential party in London for giving it a spirited working, and has consented to grant a new lease for 21 years on much more favourable terms than when last worked.

It is not necessary here to go into a detailed report of the mine; suffice it to say that a small amount of money and a very short time, with judicious management, cannot possibly fail to place Cwm Erfin as one of the richest mines ever yet worked in Cardiganshire.

I will next offer a few remarks on the Tynyfron Mine, which up I will next offer a few remarks on the Tynyfron Mine, which option date has been worked by a single gentleman, lately decay who opened out an excellent course of blende and lead of one for so for the length opened a profit of 2500L, per year, or 25 give for the length opened a profit of 2500L, per year, or 25 progressive for the length opened a profit of 2500L, per year, or 25 progress rapidly, there can be no deubt what ver in the section and the side of the lowing years the profits I have named can easily be deaded will open out ground over the present adit that will last for many years, and will afford ample time and opportunity for bringing much deeper adits, both on the course of the lodes and by shorten cuts from the side of the hill; in fact, other adits can be been cuts from the side of the hill; in fact, other adits can be been cuts. cuts from the side of the hill; in fact, other adds and by slor cuts from the side of the hill; in fact, other adds can be brown as the same of the present generation. Arrangements have been made chasing this property with a gentleman who has long be nected with mining in this county, and he will at once proceed the areation of the requisite machinery and the nected with mining in this county, and new matter proceed with erection of the requisite machinery, and the proper and specific development of the mine. In this case also a new lease has procured at a reduced royalty, and this as we'l as Cwm Edda amply supplied with water for machinery of all kinds, and two a supply supplied with water for machinery of all kinds, and two as the country of the machinery of the country of th amply supplied with white a lasting and profitable investment opportunities for making a lasting and profitable investment again likely to occur, at any rate in this county for many. The working of these mines will prove a great boon to the The working of these mines embarking in them, and give much respected owners—Mr. Jones and Colonel Powell—what be most justly and richly deserve—a good income from them Goginan, April 17. ABSALOM FRANCE

MINING LEASES.

SIR,—I am a member of the Cornwall Mining Institute, and tended the meeting held here on Tuesday, in last week, to be Mr. Symons's lecture on Leases, and Mr. Rule's paper "On tell cessity for Improvement in the Conduct of Mining." I suppose. I report the proceedings of that meeting. If you have not be the following paragraphs in Mr. Symons's paper perhaps in not object to include them in your report.

Mr. Symons said that most landowners are disposed to gu Mr. Sylhous said that he knew one who, when applied to by any mining leases, but that he knew one who, when applied to by any agent for a grant, said to the applicant, "I will not grant least my land, so help me God." You will not accredit that landom

for much piety.

In another part of his paper Mr. Symons gave an instance of his nanother part of his paper Mr. Symons gave an instance of his landowners charge. experience as a mining lessee. He said—" Most landow in their leases what is called a minimum annual rent. in their leases what is called a minimum annual rent. Lord Ramouth. Mr. Fortescue, and several others do that; but it was been done, I believe, till within the last 20 years or thereabout. A few years ago I applied for a mining lease of a small tenement—should solve a done of a small tenement. The late Hon, G. M. Fortescue. I found the terms to be these late 25 gaineas, annual rent 50%. I immediately declined it. Shift afterwards, being in London, a broker asked me if I knew where a could get a settly each country mine. atterwards, being in London, a torger leaven me if I knews could get a sett near a popular mine? I said, Yes, Terrais just now,' and I applied for a lease of land near, and found terms would not suit me. 'What are the terms?' said he, hun, when he said, 'Apply for it at once for me, I w 25 guineas for the lease, and 50L rent is a trifle for a compar.' I complied, and obtained the draft of lease. He fit saked me at the come a joint lease, to which I consented an is av.' I complied, and obtained the draft of lease. He aft sked me to become a joint lessee, to which I consented on hi taking to hold me harmless against the covenants. He gate me his written undertaking to that effect, advertised the min to ceived about 2000/. deposits, embezz'ellit, cheated me out of livit.

became bankrupt, and permitted all the responsibilities of the log to fall on me. Fortunately for me the lord's agent was lenient. Such was Mr. Symons's experience, as given in his paper; Inpoce the brokers in general are of a more respectable characte, if not extermination would serve them right. The discussion also not extermination would serve them right. The discussion size the reading of the papers was short, because of the limitation time, those who came from the east wanting to go by the east p I think that the Institute will effect a great am in relation to mines. - Camborne, April 17.

GUNNISLAKE (CLITTERS) MINE.

-I am glad to see the bi-weekly report of this mine spain appear in the Journal, although it does not give any informalia respecting the progress of the cross-cut south at the 188 fm. led towards the intersection of Craze's and other south bdes. The grat future of this speculation (and upon which I was induced to by shares) was the result to take place on the accomplishment of reach ing this point. Will the captains, therefore, kindly enlighten the shareholders on this subject in their next report?

SHARRHOLDER.

SOUTH CONDURROW AND WEST GODOLPHIN MINES.

SIR.—It is to me rather singular (the not being a financier may Sin,—It is to me rather singular (the not being a financier my make the difference) how capitalists, large and small, make investments in foreign bonds and securities, which in so many insames have ruined thousands, whilst home ones are neglected. Having had some means unemployed a few years ago I speculated in mining shares, but acting indiscriminately, and by the advices of interated unscrupulous parties, got my fingers well burned, but have held in for a number of years in South Condurrow and West Goddpin Mines, which are both turning out well, not withstanding the price of tin. The former is paying dividends, and the next one is expected the best for some time past, the mine being another in the conduction of the condu price of t n. The former is paying dividends, and the next disast expected the best for some time past, the mine being considerally improved; and the latter mine—West Godolphin—would in all probability have also paid a dividend (as they had a credit of 923) at their last meeting had it not been that water having got into the contraction of the contracti mine, and the present engine being unable to keep it under be committee came to the conclusion to get one more powerful. The output from the mine has considerably increased.

A SHAREHOLDER Belfast, April 17.

BEDFORD UNITED MINES.

Sin,—I am not a little surprised to see the evasive remarks of Mr. Laws in last week's Journal in reply to my questions of the previous week. I think he would have shown himself to be man deserving the position he holds if he had just said he could not answer, and had acknowledged himself besten. After assuring the country of the coun Mr. Laws in my last letter that my object for writing that and be previous one was the benefit of my co-adventurers and neighbourhood, and not as he asserted "the abuse of himself and the constitute". he never can think I am so selfish as to write him to obtain, and make use of privately, such an amount of valuable information as I asked for, which I consider every shareholder is fairly and legitimately entitled to, and which a secretary, or other servator legitimately entitled to, and which a secretary, or other servases the company, is in all honour and fairness bound 'to furnish the shareholders publicly or by private circular. The shareholder should not be blindfolded, then squeezed into silence, or freezed out of their shares by such replies, which can only be equalled by the management of the company's property. Such subterfuges, lowever, are invariably resorted to for certain motives, and are with a certain class made to take the place of logic, and when so used the generally baffle unwary and unsuspecting shareholders. I can a saure Mr. Laws that I am a shareholder in these mines, therefore I claim to be entitled to the information asked for in my last letter. I claim to be entitled to the information asked for in my last letter but as he declines to reply I think we may reasonably calculate annot do so, therefore shall leave the first four questions in hands as unanaworable, and for others to form their own judgement f; not so, however, with Nos. 5, 6, and 7 questions, for these [will need not trouble you again with the question, but will ment

state that it is not practicable, judicious, and economical management.—6. Those who have the management would exhibit a greater amount of wisdom if they were to confine their operation for the time being to the confine their operation. for the time being to the lode on which the engine shaft is beig sunk.—7. If judicious and economical management were exercised at once I most unbesitatingly assert that their mines could be brought into a dividendant or condition without calling months. brought into a dividence paying condition without calling upon the shareholders for another penny. The estimated liabilities of The estimated liabilities of was only 34
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APRIL ssets, as lai

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SIR,-In

Capt. Tregel

Sir,—I Some Yea complain of shareh as your o ontinue of the mi if your (Marke

SIR,— Edward

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eds. 85 laid before the last meeting, for the meeting in July next ssets, as laid before the last meeting, for the meeting in July next was only 341/., and the last sale of copper ore realised 200/. above was only 341/., and the last sale of copper ore realised 200/. above was only 341/., and the last sale of copper ore realised 200/. above which the shareholders at the last meeting made a call of to cover which the shareholders at the next account-day without 20 per share, or 1200/., so that at the next account-day without 20 per share, or 1200/., so that at the next account-day without 20 per share, or 200/., so that at the next account-day without 20 per share, or 200/. If this be not igg of Mr. Laws, show a balance in hand of 1050/. If this be not igg of Mr. Laws, show a balance in hand of 1050/. If this be not igg of Mr. Laws, the committee, or anyone else says to the contrary. what Mr. Laws, if he can, kindly reply to the following questions:—1. Who is the company's auditor?—2. When was he appointed?—3. When did he, or any other unconcerned and importial pointed?—3. When did he, or any other unconcerned and importial pointed?—3. When did he, or any other unconcerned and importial pointed?—3. Are the winces ent to hold the next meeting on the mine?—5. Are the winces which were suggested to be sunk by the Inspector of Mines completed yet? If this question cannot be answered in the affirmance of the did were suggested to be sunk by the Inspector of Mines completed yet? If this question cannot be answered in the affirmance of the wince in the firmance of the wince of the wince of the last meeting of the meeting of the meeting of the mines of

CAPTAIN TREGAY, AND PEDN-AN-DREA MINE.

CAPTAIN TEEGAI, AND FEDN-AN-DREA MINE.

Six.—In last week's Mining Journal I observe another letter from Capt Tregay, in which he refers to some work having been stopped early in 1876, "as soon as the company had begun to consider the question of discontinuing to work the mines." To prevent any misake, I beg to say that this is not what I alluded to when I asked whether any dead work was done at the expense of the late company after it was known the property was to be sold, but which work could be of no benefit except to the incoming purchasers. I cannot during the last three or four months of the carrying on of gent during the last three or four months of the carrying on of

meant during the late company.

the mine by the late company.

Capt. Tregay says that the mines produced under the late company 357,833. worth of minerals, but he omits to add that this was pany 357,833. worth of minerals, but he average price of tin of 20 years or more, and that though the average price of tin during that period must have been at least 30 to 40 per cent. above it. dung that price, and at times nearly 100 per cent. higher, yet the total smount divided was only 1423, 10s., against 100,000, in calls. Even if the mine improves in depth the costs will increase.

W. X.

CAPT, TREGAY, AND PEDN-AN-DREA MINES.

Sir,-Your correspondent "W. X." having shown his bad taste by SIB.—Your correspondent "W. X." having shown his bad taste by giving the lie to my statements, I must discontinue correspondence with such an individual. I am not in the habit of making false statements, and, in this instance, can substantiate every word I have said or written on the subject. When next your correspondent comes forward as a pretended champion for the truth, let him show his earnestness by appearing under his own proper colours. Men who seek truth, and do battle for truth's sake, do not find it necessary to hide their faces: neither do they generally attack provides who seek truth, their faces; neither do they generally attack people cossary to hide their faces; neither do they generally attack people through the public papers anonymously, or under false signatures.

W. TREGAY.

ROMAN GRAVELS MINING COMPANY.

Sm.—In last week's Journal is a letter from "A Shareholder of ome Years' Standing" in the Roman Gravels Mining Company, Some Years' Standing" in the Roman Gravets Mining Company, complaining of its financial management. At the annual meeting of shareholders, held May 30, I called attention to the same points as your correspondent now complains of, but without getting any satisfactory explanation or assurance, and the same policy has been continued since. As I have reason to believe in the intrinsic value of the mine itself, but have no confidence in the way it is managed, if your correspondent will communicate with me (you, Sir, will kindly give him my name). I shall be happy to join him in taking steps to get a different system adopted.

Market Harborough, April 19.

Another Shareholder.

NEW CONSOLS SILVER AND ARSENIC WORKS.

SIR,-In last week's Journal I observe a letter signed by Mr. Edward Skewis, a gentleman whom I do not know, and if I ever saw him he centrinly made such a slight impression on my mind that I have no recollection of him. Whether Mr. Skewis has been here or not within the last 18 months is best known to himself; if so, from his assertions, I am sure that many gentlemen who have visited these works will agree with me that he must have kept his eyes shut at the time, both with regard to the manipulation and chemical working of the process conducted by the chemist of New Consols. It appears from Mr. Skewis's remarks that he not only wants to cast a slur on the New Consols Works, from motives best known to himself, but also on me, of whom he knows nothing.

Whatever that gent'leman's object is for making such vague observations I care not, as I have enjoyed a thorough technical education at one of the o'dest and most celebrated "Berg Academies" in Germany, where I studied not only chemistry, but went through the full course of subjects connected with mining and metallurgy. Further, I am glad to say that my work at New Consols has been tested from time to time by two of the leading analysts in England, and Lawr registed the projects of the leading analysts in England, and lave received the praises of all who have made reports on my department. In conclusion, I may also remark that the present difficulties (which I hope will soon be settled) have nothing to do with the process, which produce of ore treated and precipitate made have shown,—Callington, April 19.

Henry L. Simmons.

NEW CONSOLS MINE.

SIR,—Some of your correspondents seem to have been trying to lay the blame of the present state of things upon the manager, Capt. R. Pryor. Are they just in doing so? Has he, as manager, ever been left here to act upon his own judgement or responsibility in any such sense as are the managers of Dolcoath, Carn Brea, or Botallack? How would those mines get along if saddled with an expensive London office and London managing director, such as our company was weighted with, until delivered from the latter in August last? I have read with pleasure the letters in last week's Journal

any was weighted with, until delivered from the latter in August last? I have read with pleasure the letters in last week's Journal from "An Observant Miner" and "A Creditor," and can supplement their views by an in-ident from my own observation.

When last on the mine I noticed two of the new Oxland calciners already at work, and the third in preparation for fixing. The iron shell, of about 30 ft. length and 5 ft. diameter, was of very strong boiler plate, entirely new, made by a Glasgow shareholder, the price being 1701. delivered at Plymouth. By way of contrast, at Devon Great Consol, adjoining, where there are also three Oxland calciners at work, the iron shells of all three have been made out of old Cornish boilers, worn out for use as boilers, but serviceable enough for the present purpose when strengthened longitudinally as they are by four old bridge rails riveted on outside. Surely if the purchase of the materials for the erection of the calciners at New Consols had been left in the hands of Capt. Pryor he would readily have found many similar old boiler shells to serve the purpose as effectually, to the great advantage of the company. The voluminous reports presented to the shrapholders last vear by Messrs. Satterthwaite and the great advantage of the company. The voluminous reports presented to the shareholders last year by Messrs, Satterthwaite and Kennelly omitted to mention the above particulars respecting the new calciners; a doubt, therefore, naturally arises whether possibly other similar omissions might not have been noted by independent shareholders visiting the works with their eyes open.

Eighteen months ago, when treating 24 tons per day, I understood a profit of 2001, per month was already being realised so far as the mine and works were concerned, but what percentage was this of

mine and works were concerned; but what percentage was this of the company's enormous capital, even had there been no London manager and office? Cun any original shareholder enlighten us as to the original expenditure—how much of the capital went to vendors and their names how work to work the capital went to vendors to the original expenditure—how much of the capital went to vendors and their names, how much to promoters and their names, and how much to any of the former directors, Messrs. Hall, Phillips, Phipson, and Rutter? We may congratulate ourselves on having latterly enjoyed the advantage of a Chairman of high standing, with whom all will sympathies in the arduous task he has had in the direction of so gigantic a white elephant as New Consols has hitherto proved. It is to be hoped that the appointment now made of a committee of local creditors and shareholders to supervise the management on the spot will relieve him of much anxiety and Libour, and also that no further extravagant expenses will be incurred for the benefit of in-

dividual interests, where Capt. Pryor, if unhampered, could get the same work done at a fraction of the cost. It may be well, however, to caution the shareholders that the names of the committee include one which awakens unpleasant memories in connection with the disastrous mismanagement of the celebrated Terras Tin Mine.

The recent appointment of an engineer seems to be rightly con-demned as an unnecessary extravagance. With a resident practical working manager and a resident chemist, it is puzzling to know what working manager and a resident chemist, it is puzzling to know what occasion there could possibly be for creating this additional office. An extra clerk might have been of more service to assist the manager in drawing up the detailed reports constantly forwarded to the London office; under the local committee, perhaps, this heavy correspondence may now be curtailed with advantage. I hoped to read in your report of the meeting on April 10 an announcement that the superfluous office of engineer had already been abolished. When all extravagant expenditure incurred independently of the managing agent at the mine has been refunded to New Consols by those who ordered or sanctioned it, then will be time enough to lay upon his shoulders the long delay that still defers the desired success. Meanwhile shareholders cannot do better than call at the works any day shoulders the long delay that still deters the desired success.

while shareholders cannot do better than call at the works any day

while shareholders cannot do better than call at the works any day unexpectedly, and see for themselves how closely the whole of the operations are supervised under the direction of Capt. R. Pryor by his son, Capt. Joseph Pryor, F.G.S., and the other active resident agents.—April 16.

OUT ADVENTURER.

NEW CONSOLS MINE.

SIR,—I little thought when sending my contribution respecting this mine that so many rebukes would last week be administered to its chief representative. Capt. Pryor, otherwise I would have refrained from writing so strongly, as it is far from my forte to wish to inflict chagrin upon anyone, more especially when down and in trouble; still "Truth is stronger than fiction," and as it is "Never too late to mend," he can cull together the true is me so plainly given in the anecdotic denunciation to which the writer had at least the courage to attach his signature, and treat his numerous flagellations from anonymous scribblers with a wince, yet the stoic indifference which such literary productions generally merit. I notice amongst the shoal of bullyings and brow beatings that there are plenty ready with a remedy, and the anonymous voice seems to be unanimous in favour of concentrating the ores before being chemically treated, presumably because Mr. Warington Smyth suggests this as the auticle. Now because Mr. Warington Smyth suggests this as the antidote. Now, with all due respect I beg to materially differ even with this gentleman of undisputed talents and acknowledged renown, and will simply becken to my aid the same old and only arguments I have

simply becken to my aid the same old and only arguments I have ever used or ever intend to use—facts and figures.

We will take the treatment of 100 tons per day; and to quote from "A Shareholder." "the question of concentration is the turning point of the whole concern," but he goes on to say that either "by stumping or crushing and jigging 60 to 70 per cent of the ore can be rejected." I at once readily admit that it would be far better to have only 40 instead of 100 tons pass through the process, if the contents of the 100 tons could be packed into the 40 tons, but it is an uttrimpossibility to accomplish this, and taking the New Consols ore as they really are, 1½ per cent. of copper, 3 ozs. of silver, 10 per cent. of arsenic, independent of sulphur and tin, I say from practical experience that the 40 tons will not contain more than 1½ per cent. of copper, showing a loss of over one-half of the whole of the copper contained in 100 tons, the balance being washed away, and remaincopper, showing a loss of over one-half of the whole of the copper contained in 100 tons, the balance being washed away, and remaining in the tailings. As for silver, the 40 tons will not increase I dwt., but still give only 3 ozs. per ton—in fact, it is not uncommon to find the tails richer for silver than the heads. We have thus 40 instead of 100 tons of about the same quality for silver and copper, and it must be well remembered that the cost of mininz, hauling to surface, and even stamping, cru-hinz, and dressing the 100 tons has to be paid, whereas the 40 the are barilly (to say the most) visible pariebal pariebal. whereas the 40 times are hardly (to say the most) visibly enriched for silver and copper. I call this nothing more nor less than straing at a grat and swallowing the camel, and am not surprised to find that Capt. Pryor has omitted to carry out instructions or orders to

oncentrate ores by washing or jigging for chemical treatment.

What I complain of is this—if the ores are not rich enough to be reated by the Nascent process, or if the process is too expensive to extract the silver and copper profit bly, the representatives of the mine should manfully and honestly come forward and state the truth, unpalatable as it may be, and either stop the whole affair with its be vy costs and losses, or consult with me, the patentee of the process, to remedy the evil. I maintain that after the mineral is procured, and has gone through the expense of crushing, no dressing is required, and that the 100 tons can be operated upon at a less cost than it will take to jiz, and then treat the balance of 40 tons by present appliances. It is not the matter of money—10 000% would be of no service without the correct methol, but with it and able management a triling amount only is required for a fortune to carve itself.

ment a trifling amount only is required for a fortune to carve itself.

Without any absurd egotism. I have made the art of chlorination a study for years by day and night, as after patenting the Nascent process, by which low-class ores can be treated for silver and copper under one operation, I soon found the missing link to a real success in the great cost of converting sulphides into chlorides, but having at last arrived at the great de-id-ratum, enabling me for comparatively little outlay to treat 100 tons ner day at a working cost antisy. tively little outlay to treat 100 tons per day, at a working cost entire of less than 10s. per ton, I am in a position to speak plainly, and am ready to find 50l out of 200l, the amount required to put up the first instalment of the necessary plant at New Consols, to treat 20 tons per day, which can be increased to 100 tons ad libitum by additional capital, or out of profits that will immediately accrue under my management, upon the understanding that I shall have 10 per cent.

of net profits up to 1000%, and the honour of having brought the property from beggary to wealth.

I am in real earnest, and the readers of the Journal can watch the future career of the mine and its consequent failure under the concentration of ores as proposed by "A Shareholder," or witness its success under my economical salvation, alteration, and management, and if this is not open candour, with a desire to get nothing for no. and if this is not open candour, with a desire to get nothing for nothing, or a moderate payment for services actually rendered, and honour to whom and only when honour is due, my name is not what it is.—Bishopsgate, London, April 11. Thos. J. Barnard.

NEW CONSOLS MINE.

SIR,—Confirming my letter of last week (too late for insertion) I have to inform your correspondent "R. J." of Manchester, that the Nascent Process, as used at New Consols, is essentially different from the wet method employed at the numerous chemical works scattered over the kingdom, inasmuch that (apart from minor details which were given in the patent specification, by-the-bye costing 351.) boiling brine instead of hot water is used to wash out the chlorides of silver and copper, enabling the two metals to be precipitated together in their then Nascent form by the aid of iron. I maintain that although only an improvement upon the well-known wet methods, there never was a greater novelty than making merchantable by concentration ores containing 1 per cent copper silver to 60 percent, copper and 150 ozs, silver per ton, and it has really visited the kingdom's principal chemical works he must well know that the bulk of, if not all, the ores treated by them are Spanish pyritse of one uniform quality, and never less than 2 per cent. copper. I can also inform him that at the South Down Works, Plymouth, represented by the first chemists of the day, they escayed to treat English ores yielding 5 per cent. copper and 7 oza. silver per ton from Hingston Mine, and after repeated experiments gave up the attempt as impracticable, pronouncing the ores to be too re-bellious and complicated, and have ever since confined their opera-tions to Spanish pyrites, yet at the same time they were in posses-sion of a process, Claudet's, capable of securing silver from the Spanish ores, which never yield more than I oz, per ton. What reply has "R. J." to this? It is little enough I per cent, copper ore and 3 ozs, silver, and without the latter could be secured under one operation and at the same time, which is the secret of the Nascent Process, the low-class stuff at New Consols could not be made to pay. A novelty to be of any real value must be a commercial success. Science is one thing, and commerce and profit are another, and unless they could at least sometimes be made to blend together science certainly would not take very giant strides ahead; therefore, patent or no patent, the matter is hardly worth discussion, even to me the

least disinterested party, when so vital and important a subject is in hand as the acquiring of a real genuine success at New Consols or elsewhere "for the benefit of mining generally," and it is only the sterling compeers of the mining world who in the search for mineral wealth have emptied their own pockets and lost the morey and confidence of their friends and patrons, who can appreciate and look yearningly and feelingly towards such a denouement—the haven of rest, peace, and plenty."—April 17. THOS. J. BARNARD.

NEW CONSOLS MINE.

SIR,—Last week's Journal contains a short letter from Captain Skewis, one of the numerous advisers of the New Consols Company, like myself. Whenever I offer gratuitous advice to anybody it is simply from an earnest desire to do good. A good motive influenced me to write what I have sent to your Journal regarding this mine. The retention of a board of London directors is a great evil to the company on account of the expense. nuenced me to write what I have sent to your Journal regarding this mine. The retention of a board of London directors is a great evil to the company, on account of the expense. I do not know what salaries they receive, but if they receive no salaries the expenses of their journeys to and at the mine are, I am sure, considerable, and the expenses of Capt. Pryor's journeys to meet them in London must also be considerable. Abolish the board and the Londor office and secretary, and a great saving would be effected, to say nothing of the saving by getting rid of their mis-direction at the mine. The appointment of a local committee was a judicious measure, and that committee should act independently of any London control. The members of that committee are practical men, and are certain to do what is best for the company, being themselves interested in the success of the mins. As Capt. Skewis said, a good chemist is the chief requisite at the works; the engineer is a useless appendage. Perhaps a captain or two might be spared also, and Broadgate engine should not have been put to work. If the stuff treated admits of selection, by all means make a selection; indeed, do everything possible to retrench expenditure and enhance returns. I am glad to find that the petition to wind-up is dismissed, and that the men are to be paid. I have the greatest confidence in the mine, and shall be very glad to see its prosperity.

Calstock, April 17.

AN OBSERVANT MINER.

GORSEDD AND MERLLYN MINE.

SIR,—In consequence of the extraordinary reports that have of late been so freely circulated with regard to the discovery of lead ore at the above mine I have made a thorough underground and surface inspection of the whole property, and I am pleased to be able to state that I can corroborate the statements that have been made from time to time by the manager and those agents who have inspected on behalf of shareholders. Looking upon the matter in a greel original point of view, and considering the ore is found in a true geological point of view, and considering the ore is found in a true fissure vein. I give it as my opinion that the discovery is by far the most valuable that has been made in the district for the past fifteen The ore was first met with some six months since in making a winze below the adit level (50 yards below surface), and as depth was gained so did the ore increase both in quantity and richness. At 12 yards levels were driven east and west on the lode, and the ore was found to continue in either direction equally rich with that in the winze. A second winze (No. 2) was then commenced further west in the same level as the first, and almost immediately struck the ore, with the same satisfactory results as had attained the first the ore, with the same satisfact my results as had attained the first essay. The lode was at this point again driven east and west, and proved itself as before almost uniform in either direction; thus the lode has been proved for upwards of 50 yards in length, with both ends showing as rich as any part worked on, so that the wealth already found is probably only an index of what may turn out to be, as has been the case in other mines in the neighbourhood, almost inexhaustible. inevhaustible.

While the above operations were being carried on a large engineshaft was sunk from surface (eastward of these workings) to the a lit level, and thence to a further depth of 20 yards, at which point the lode, which underlies north, was again intersected with similar satisfactory results, thus conclusively proving that there are immense reserves to be dealt with which will he a source of profit for a long time to come. The lode throughout at the lowest computation will average 4 tons of lead per fathom, which is equivalent to a money value of 60%, and as the ground can be taken away at a total cost of 5%, per fathom the profits are easily calculated. The present return of lead is 50 tons per month, realising about 750% at a cost of about 250%, leaving a profit of 500% per month. Taking into consideration the general appearances, and the energetic manner in which the mine is being developed, there can be little doubt that within another six months these returns will be doubled. I am informed the mine will pay its first dividend in June next.

Coleman-street, London, April 20.**

A. W. THOMAS. the lode, which underlies north, was again intersected with similar

PNEUMATIC CONCENTRATOR.

SIR,—May I ask the favour of an opportunity to amend "Expectant's" announcement, in last week's Journal, that a pneumatic concentrator will shortly be shown in operation at Messrs. Dillwyn and Co., The arrangement is with Messrs. Richardson and Co., Copper Ore Wharves, Swansea. Walbrook, April 20. B. W. HART.

THE WILD DUCK, OR SPORTSMAN'S ARMS.

"Now Comrades," says uncle Henry Treylor, "we are all met again safe and sound, and I hope Jemmy Dowa have made up a good speech, for he had plenty of time to think over." "Iss," say Jemmy, "but you forget men that I have ben travelling, and that and speech making don't go together." "Well then," says Jan Temby, "lev us have some account of your travels, for I expect you see'd a fine lot of curiosities." "I tell ee," says Jemmy, "that I went through St. Agnes, Perran, along the North Coast to Newquay, Lower St. Columb, Mawgan, &c., and if I did not see any curiosities, I see'd lots of fine lodes of copper, tin, lead, mundic, iron, &c., and if it was to save my life men I can'nt make out the roguery or foolery of people spending millions of money for the good of furiners, when the can honestly make fortin's at home. Oh, but some will say our 'eld deep bals' can never face the furnit tin, and if there is not a better price the must be knacked. Well knack away, for that waan't bring the end of the world, or the end of the bals, for while we have scores of miles of all sorts of lodes whole to grass, and never touched, I say the man is a fool who will tell the people that our bals are not able to face iss, and beat too all the furiners in the world. Now, able to face iss, and beat too all the furriners in the world. Now, look here men, in the parishes I have travelled through from St. Agnes to Mawgan you may find new bals enuff, and good ones, to Agnes to Mawgan you may may be people have no business to be losing money in old deep mines, and pretending to make profits, and speeching out every day that we can't face the furrint in, when here of money can be made by working new shallow bals." "I a heap of money can be made by working new shallow bals a heap of money can be made by working new saintwoods. Adon't know comrades," says Jan Jewill, "what may be your opinion, but I think Jemmy Dowa made a very decent speech, but I want to know with all the great managers and captains we've got, and all the larned societies and they there sort of things, whether the old deep mines, with the present price and all the furrin tin, with a new system of management and dressing, could not be made to pay well?" "Now that's ob'n," says Old Tom, "for I tell ee men until well?" "Now that's ob'n," says Old Tom, "for I tell ee men until you have a plan of drassing that will stop the tin, and copper and lead too, from washing into the sea no old deep mine, and many sha low ones, will ever pay; and let me tell ee what I see'd in a bal not long ago. I was going on, and seeing some boys very busy I stopped to see what the wor doing, well the wor washing hutchwork (copper) in a strake, there was a deep cover and catch-pit at the end, the water going from the strake was thick and muddy, so I got a basin and spoon and skemm'd up some muddy waater from the cover and catch-pit till I filled the basin. Now I tell ee men you would hever bleve what was swemmen away in that muddy waater, and wor never seen again in this world. Well, after the muddy waater settled in the basin I had ore enough there for two samples; a friend had them tried for me, and the each made I T produce. Now hark, the hutch-work made a produce of 7s., so what was swemmen away and never seen again was 10½ produce richer

MBER.

ne again hten the LDER. VES. er may

than the washed hutch-work that was left. Taalk about dressing than the washed nutch-work that was left. Tasik about dressing, and captain dressers, why if this here ore was carefully picked in the stone and crushed dry, no ore would be lost, and who can tell how much is lost every day. I tell ee men the there captain dressers are so big as 'bulls beef,' but if the cuan't stop all the tin, copper, and lead from washing away, I would send them right about, and never stop till I found dressers who could save all the ore, but this hear will never be done till my machine and plan for day dressing

never stop till I found dressers who could save all the ore, but this here will never be done till my machine and plan for dry dressing is used, people may 'loff if the mind to about my machine, but I shall have the loffing side some day."

"I have no doubt," says Cousin Will, "that Old Tom's plans to a great extent will some day be adopted, for it is really astonishing, with all our boasted knowldge of mining, engineering, &c., that we cannot hit on a plan of dressing ore without allowing tens of thousands of pounds worth washing every year into the sea. I believe, too, that in many instances a vast improvement and saving may be made in the discharge of stuff from the deepest mines. There was a time when our engines performed a duty of 'nigety millions' but made in the discharge of stuff from the deepest mines. There was a time when our engines performed a duty of 'ninety millions,' but nothing like this is done in the present day. Our engineers require brushing up. A few of the great managers have too much to do, and many of them are hampered by brokers and barbers' clerks. In fact, until we bring the system of dressing ore to perfection, introduce the speediest and most perfect and economical plan of discharging stuff from deep mines, and get our engines to perform a higher duty than was ever done before, and confine one able manager to each extensive mine, in which he shall employ his time and best energies, without being allowed to be bothered by the fraternity of shareholders—until all this is done we have no right to be frightened and to cry out about foreign mines and Australian tin." "I quite agree with ee," says Uncle Henry Treylon, "with this here exception; if Old Tom's plan was brought forward by a rich man it would be in use long ago, and unless rich men come forward with new be in use long ago, and unless rich men come forward with new systems and improvements the managers, and cap'n dressers, and lots of others will stop it." "I'll take care that I waan't be stopped," says Old Tom.—Cousin Jack's Unpublished MSS.

MORFA DDU, OR PARYS MOUNTAIN.

MORFA DDU, OR PARYS MOUNTAIN.

The wonderful agglomeration of metallic sulphides constituting the bluestone of the Morfa Ddu Mine, in the Parys Mountain, Anglesey, is very rarely to be met with elsewhere in the United Kingdom, although the "silver blande" of the Connorree Mine, in Ireland, presents somewhat similar characteristics—Lead, 2610; copper, 0.55; zinc, 200; iron, 11.56; sulphur, 24.60; insoluble rock, 16.70. This ore contains a trace of gold, and of silver 6 ozs. to the ton.

The Parys Mountain is a very large sett, and the Morfa Ddu is a mine complete in itself, some considerable distance to the west of the other workings. The long adit level is 30 fms. deep at White Rock, and after turning to the north from near No.1 shaftit has intersected three lodes. The first of these is 2 ft. 6 in. wide, then further north is 5 fms. chert, then the second lode 1 ft. wide, next 3 ft. of shale, and then the third lode 3 ft. in width. The Great White Rock is to the east, and the general strike of the lodes would tend to show that they may converge to this as their outcrop. This capto show that they may converge to this as their outcrop. This capping of white quartz has always been regarded as probably overlying another such enormous deposit of copper as was found at the other end—that which is known as the openoust, and from which such riches were extracted as to give a title of nobility to the landlord, and dividends amounting to millions to the shareholders of the day. The "oldest inhabitants" state that a white rock origilord, and dividends amounting to millions to the spareholders of the day. The "oldest inhabitants" state that a white rock originally covered this great opencast, and the geological conditions with varied metals prevailing were remarkably similar to those now seen at Morfa Ddu. It is lamentable that for lack of the necessary funds or enterprise this very important point should be left unproved. All the lodes dip to the north, and about 4 ft. to the fathom. At the No. 2 shaft a lode was met with at 6 fms. in depth, and at 14 fms. alevel was driven from this shaft north, and the lode was again mat with a winze sunk upon it, and copper pyrites extracted, until met with, a winze sunk upon it, and copper pyrites extracted, until operations were compulsarily saspended by this winze, its level, and part of the shaft becoming filled with water. It is at the other extremity of the very long add level that the bluestone has been chiefly worked, and here, too, not far from the whim-shaft, are two winzes from which yellow copper was being taken until the miners were driven out by water.

A considerable sum of money has been expended by the present Parys Mountain Mine Company (Limited) upon the development of the Morfa Ddu property, and it is admitted by all authorities, including Capt. G. T. Trewren, that the expenditure has been judiciously laid out. In 1873, after over 200 tons of bluestone were raised, seeing that the ore was likely to continue down, preparations were made for sinking the engine-shaft in order to open out a deeper level. Labour at that time had assumed an exaggerated position of value, and the men having refused to work at the price offered them operations were suspended, and have not been since renewed owing to the resources of the company being required for the older mine, the resources of which are immensely affected by the price of copper, which has now ruled low for several years. British metallic mining industries, even beyond our other national

staple products, are suffering from want of reciprocation on the part of foreign countries of our generous free-trade policy. Whilst we allow our own markets to be swampet by duty free copper from Chili, tin from the Straits of Sunda, worked by Dutch Chinese, iron manufactures from Belgium and Prussia, and lead from Spain, heavy import tuxes tell against us in nearly every foreign port. It may become a question as to whether, in self-defence, and for the general good, our Government may not be driven to administer to other nations some temporary lesson to induce them to follow in our path of cosmopolitan liberality and beneft.

The Morfa Ddu and and White Rock Mine is in no way in bad condition. There is fairly good drainage by means of an adit by the side of the mountain to the 30, and by the White Rock shaft having been sunk to communicate with this level there is good ventilation, and at the south-west angle shaft there is an engine in staple products, are suffering from want of reciprocation on the

ventilation, and at the south-west angle shaft there is an engine in sound working condition. The bottom of the bluestone has never yet been reached, and it is a very interesting speculation as to what may be under it. The exact nature of the rock's formation of the Parys Mountain has much puzzled the geologist as being of an unusually disturbed and intricate character, but it may be described generally as felspathic trap. In some of the bands of slaty shales graptolites are met with. The great mass of copper pyrites that was quarried out of the opencast was between black killas and felspathic rocks. It may not be generally known that the mountain derived its name from Robert Parys, Governor of North Wales, in the reign of Henry IV.

The northern coast of Anglesey does not lay in the track of ordiventilation, and at the south-west angle shaft there is an engine in

To such as take interest in geology and metals, the courteous agent of the Parys Company, Capt. Thomas Mitchell, an old Chilian and Californian miner, is ever ready to allow facilities for seeing the wonders of this famous mine and its belongings. These include acres of precipitation pits, in which by means of old iron the solution of cupric sulphate, the "strong water," as it is called, deposits its copper in a solid state, the acid, from its greater affinity thereto, going to the iron. There too are the lake of the lovelist carries to the iron. There, too, are the lakes of the loveliest azure colour due probably to some escaped blue vitriol), in which le ochre is accumulating. Not far from the dressing-floors to the iron. valuable ochre is are seen piles and piles of halvans, waiting patiently for better times to be broken, crushed, jiggered, and buddled into a commercial pro-duct. Owing to the existing depression in the coal and iron trades

labour is now abundantly cheap.

The "Dinorben Arms," at Amlwch, is a comfortable, well-kept hostelry. Very enjoyable walks may be taken on the west to Bull The "Dinoroen Arms," at Amiwon, is a comfortance, were approached by the solution. Very enjoyable walks may be taken on the west to Bull Bay, and on the east through highly picturesque scenery to Point Æianus, with its foliated rocks and its hand-omely shaped lighthouse. Here green slates are worked from the very fall of the clift, the sea itself proving a good "tip" for the rubbish, the disposal of which is often found so troublesome. The town of Amlwoch posseeses the advantage of a good port for vessels of moderate tonnage,

and it can boast of containing about 7000 inhabitants, whereas towards the end of the last century it consisted of but ten houses. Amlwch owes it prosperity—indeed, its very existence—to the neighbouring Parys Mountain. Long may both town and mine continue to flourish

Meetings of Bublic Companies.

FULLER'S REEF GOLD MINING COMPANY.

An extraordinary general meeting of shareholders was held at the

An extraordinary general meeting of shareholders was held at the offices of the company, Lombard-street, on Wednesday,
Mr. WITHERBY in the chair.

Mr. J. BROOKE BOOTH (the secretary) read the notice, which stated that the meeting was called for the purpose of "deliberating on the present position and prospects of the company, and of considering the most expedient way in which further capital may be raised to efficiently carry on the works at the mine."

The CHAIRMAN, having expressed his regret at the smallness of the meeting, said in order that the shareholders might understand the present position of their affairs he thought it necessary to remind them of what took place at the meeting in October. The shareholders would remember that at that meeting the directors announced that they were carrying out a plan of operations preannounced that they were carrying out a plan of operations pre-viously agreed upon, by sinking one of the shatts down a consider-able depth in order to meet the main adit level. By that means it was hoped that a considerable quantity of quartz would be raised from the mine at less expense and with less trouble than if it had to from the inine at less expense and with less trouble than it it had to be raised by the shafts. On the occasion of that meeting a telegram had just been received from the mine which was very ambiguous, and was succeptible of two readings. The way in which it was read at the time was in favour of the future prospects of the company, but it turned out afterwards that it should have been read in another, and, therefore, this telegram did little good. The letters subsequently received stated that the manager had carried on the operations of the downwards what until the good of the control of the operations of the downwards what until the gold-heaving quarter victually. tions at the downcast shaft until the gold-bearing quartz virtually came to an end, and he, therefore, gave up continuing the downcast shaft and set to work in the 220 ft. level, where good gold had previously been found when the mine was formerly worked. The rectors heard from time to time that very fair quartz was being raised, the average being about 2 ozs. of gold per ton, but at the same time they could never discover how with this proportion of same time they could never discover now with this proportion of gold the mine had not paid better than it had. The directors were greatly surprised about a month ago to receive from the agents of the company in Sydney—Messrs. Weston and Company—a letter announcing that they had discharged the manager of the mine, Mr. Reynolds. There was not much information as to what the manager had or had not been doing, or as to the reasons for his discharge; but subsequent letters had thrown a little light on the subject. From the hints thrown out it appeared that Mr. Reynolds was appropriated. the hints thrown out it appeared that Mr. Reynolds was suspected of not having acted with honesty in his management of the mine. The agents of the company in Sydney had the power to appoint or discharge the manager, for whose appointment the directors were in no way responsible. The directors could not be in two places at once, and, therefore, the appointment of the manager had been left once, and, therefore, the appointment of the manager had been left to the agents. The directors were greatly astonished to hear of this lapse on the part of Mr. Reynolds, for although up to that time he had done little good for the company, they had almost entire confidence in him. However, Messrs. Weston's letters on this subject were rather wanting in full information, and there was evidently something kept back. Perhaps they were afraid to bring forward any direct charges, but of this the directors were not aware. The shareholders had been furnished with copies of the last letters received from Sydney and from the mine, and, therefore, they were in possession of as much information as were the directors, who regretted very much that things had come to this pass. No doubt a great deal of the immediate misfortune which now hangs over the company was due to the late manager, Mr. Reynolds. He (the Chairman) would now refer to the question of finances. It would be Chairman) would now refer to the question of finances. It would be remembered that at the last meeting the shareholders decided that the mine should be vigorously worked. That decision was quite in accordance with the views of the directors, who at that time had from 2000l. to 3000l, in hand. That money was applied in very small instalments from time to time in working the mine, and especially in carrying down the shaft which he had mentioned. The funds gradually dribbled away in this way until they were reduced to some 200l. or 300l.; and, the directors not having good news from the mine, began to consider seriously what should be done. However, as they were making up their minds on this matter the letter from the agents with regard to the dismissal of Mr. Revthe letter from the agents with regard to the dismissal of Mr. Reynolds arrived, and this put the matter rather in a different light. The letters, on the whole, had, he thought, a considerable amount of encouragement in them, because they showed undoubtedly that the mine was not worked out, and that a considerable quantity of quartz, which contained a good percentage of gold in it, was there, and the only question was whether in the future the gold could be got out at such a small expense as would make the working of the mine re-munerative and dividend paying. The directors had had different means before them for raising the money, and after consulting to-gether they had come to the conclusion that the only way to raise the money was by issuing debentures, and he would presently move a resolution to that effect. So far as he could tell he believed the views of the shareholders were in accordance with that idea; and, in fact, in the present state of the company's position no other means than debentures could be thought of for raising the money, for no one would lend money otherwise to the company in its present state. He quite hoped and expected that the debentures would be good for the amount for which they would be put down—the par amount for even if the company came to be wound up the mine would sell for a sufficient amount to pay off the liabilities and the deben tures; at least that was the opinion of the directors. He hoped that the shar-holders would give him the full benefit of their ideas, advice, and suggestions on the subject. Speaking for himself he thought the mine looked more hopeful now than it had done for thought the mine looked more hopeful now than it had done for certainly the last year, if not longer; because they had arrived at some kind of a reason why the mine had not been remunerative to the shareholders before, for with an average yield of 2 ozs. of gold to the ton of quartz, and honest management, the mine should certainly pay its expenses at least. The legal agents in Sydney had appointed another manager—a Mr. Cornish—whose letters were certainly those of a clear headed and sensible man, and the directors and death hopeful to the beautiful distinct to mine and to the derived its name from Robert Parys, Governor of North Wales, in the reign of Henry IV.

The northern coast of Anglesey does not lay in the track of ordinary tourists, but the country can boast of many charming features, and is well worth a visit by anyone in search of health and novelty. It forms a pleasant excursion from Bangor, and is easy of access via the Britannia Tubular Bridge and Gaerwen Junction.

To such as take interest in geology and matches the contraction of the matter. With regard to the question of raising money he would propose that a sum of 50000, should be aimed at, although the amount actually obtained would probably be much less than that, and that debentures in sums of 200, and upwards should be issued, bearing 6 per cent. interest at the price of 750, per cent. and the repayable by the company in five years from the date of sue. In that time—and doubtless long before—the mine would issue. In that time—and quouviers roug have been thoroughly tested, and its future decided upon. Having the "that the di invited enquiry and suggestion the Chairman moved, "That the di-rectors be empowered to issue debentures for raising further capital to work the mines to the extent of 5000%, such debentures to be issued in sums of 20th and upwards at 6 per cent. interest, payable half-yearly, and at a discount of 75 per cent.; the whole amount to be repayable in five years from the date of the issue of the debenor at such earlier time as the directors may see fit to call

hem in."

Mr. SAFFELL asked what amount 3000. of debentures would actually give sub, supposing that only that amount were taken?—The CHAIRMAN replat it would give 2250. exactly.

Mr. HICKEY seconded the motion.

Mr. GREEN wood asked what solid ground there was for supposing that inine would sell for anything?—The CHAIRMAN, in reply, said there was round for supposing that they would cartainly get something if the mine wold. His own idea was that the people in Sydney would be only too giad to the lift is own idea was that the people call an "old song" if they could do thous be remembered that 1000. had been offered for the property in that re way years ago. He thought the prospects were certainly not worse now that lat time, and the only thing which appeared to him to be essential to the suce f the company was honest management.

of the company was honest management.

Mr. Hickey remarked that the letters received by Mr. Cornish were of a plain

matter of fact description, which could not be doubted. The miss varied doubtedly a valuable one, and it had been stated to be the richest miss to an colony. It should be remembered that the great St. John del Ray Mins Ray and dividend to its proprietors for eight years after operations were commented. The CHAIRMAN is a state of the colony of the miss of the colony and the state of the miss of the miss of the colony and the proposed it was mention to this effect would be proposed. The CHAIRMAN said a resolution to this effect would be proposed. The motion authorising the issue of the debentures was the unanimously slowed. The motion authorising the issue of the debentures was the unanimously slowed at that meeting, was about to proceed to the colony, and that he would rain to attend of the company with reports.

The CHAIRMAN, in reply, stated that Mr. Joseph went out to Sydney in loss ber, 1875, on the understanding that he would go to the mine, and furnish the company with Mr. Weston, the legal agent, to visit the but could not get to it on account of the floods which we will speak the could not get to it on account of the floods which was signed affixed but to will be the could not get to it on account of the floods which was signed affixed but granished a full report, but Mr. Joseph had not show yield agent, to visit the miss or two afterwards Mr. Weston went up to the mine will support, or, indeed, of visiting the mine at all. So far as he (the Chairman) where the mine of Mr. Cornish as successor to Mr. Reynolds.

Mr. GRERNWOOD: Is he still drawing his stipend?—The CHAIRMAX: Yas had drawn it up to last year.

Mr. HCKEN asid the had previously pointed out his helief that Mr. Joseph has drawn it up to last year.

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Mr. HCKEN asid the had previously pointed out his helief that Mr. Joseph has drawn it up to l

anoney to carry on the finite. It was expedient of the money speat agon in property by the company.

The resolution—which Chairman stated he and his colleague fully coincided was then adopted.

Mr. Hicker proposed that it was expedient and necessary, under the presentate of the company's finances, to discontinue the office of legal manger, so that of the company's finances, to discontinue the office of legal manger, so held by Messrs. Wester and Co., of Sydney, and that the duties of this obstitution of the company's finances proposed to be sent out, in accordance was should be entrusted to the engineer proposed to be sent out, in accordance was in the mining managers to be obtained in Sydney.

Mr. G. SAFFELL seconded the proposition, which was carried.

On the motion of Mr. GREENWOOD, it was also decided that the directors should be requested to discontinue any further payments to Mr. Joseph of the 100, 1-year formerly voted to him by the shareholders.

After a short conversation, the meeting closed with the usual compliments.

SOUTH CARADON MINING COMPANY.

general meeting of shareholders, held at the mine, on Tuesday At a general meeting of snareholders, neid at the mine, on Tueslay (Mr. Richard Hawke in the chair), the accounts for twelfth and thirteenth months, 1876, and first month, 1877, showed a profit of 1324/. 14s. 6d. A dividend of 1280/. (2l. 10s. per share) was declared and the balance of 2224/. 3s. 4d. carried to the credit of next account. The following report was read :-

The following report was read:—

April 17.—I am pleased in being able to report that the mine is still looking well,
and notwithstanding the very low and depressed state of the copper marks, th
purser is able to present you with such a favourable state of accounts. In reference
to the West Caradon ground, I am sorry to add we have no improvement these.
Every point has been spiritedly worked from the commencement, but it has at
turned out according to our expectations. We are now extending a cross cutsest
with the hope that we shall soon meet with something that will warrant furbe
development in this part of the mine.—John Holman.

MARKE VALLEY.—At the meeting, on April 11, a call of 3s, per share we made. Capts. Wm. George and James Stenlake say—"We have 12 stope weing on Marke's and Rosedown lodes by 46 men, yielding in the aggregate 6 bits of ore per fathom; and 18 pitches by 38 men, at tributes varying from 18 bits 13s, 4d. in 1l. During the past eighteen and more especially the last nise mostly we have gone to very heavy expenses in the new shart, building engine-house, boile-house, &c., erecting a 26-in. cylinder winding engine, poppet-hearis, pulley-tasse, &c., for the purpose of hauling from both Salisbury and New shafts, at so dabout 1400l., which has rendered our machinery very efficient. With regad is the future prospects of the mine, taking into consideration the length of rigground laid open in the 55 fm. level, with every prospect of its continuing notary to the west but in height and depth, we have every belief that, with a moderns rise in the copper market, you have a property that will well repay the only that has been made for the more economical working of the mine."

CORNISH PUMPING ENGINES.—The number of pumping-engine reported for February is 17. They have consumed 2069 tons of cal, and lifted 15,00,000 tons of water 10 fms. high. The average duy of the whole is, therefore, 50,300,000 lbs., lifted 1ft. high, by the consumption of 112 lbs. of coal. The following engines have exceeded

Dolcoath -85 in	.Millions 5
Mellanear-76 in.	5
South Condurrow-55 in.	8
West Basset-Grenville's 70 in.	8
West Basset—Thomas's 60 in.	6
West Wheal Frances-58 in	5
West Wheal Seton-Harvey's 85 in	(
West Wheal Seton-Rule's 70 in	
Wheal Unity Wood-70 in	

Registration of New Companies,

The following joint-stock companies have been duly registered:—FRONGOCH SLATE QUARRY.—This company has been registered with a spital of 10,0001, in 26t. shares. Upon terms of an agreement of March 25, between George Whiteus Cooke, of Bangor, and S. E. Ashton, of Bury-street, 8t. Mary Arthis company proposes to purchase the Frongoch quarry, situate in the painle of Towyn, in the county of Merioneth, held under lease from Mr. Jame Bugbe; also about 40 acres of the foreshore of the river Dovey, held under lease from the Crown; and also certain rights in connection with the said quarry grated by the Cambrian Railway Company. The subscribers (who take one share each) are S. E. Ashton, Marlow Cottage, Wellington-road, Bromley, slate merchant; wike Cooke, Fencturch-street, tea broker; John Howard Brady, Upton, Esses, acoustic ant; Abraham Field, Leadenhall-street, printer; Cecil E. Green, Bury street, S. Mary Axe, slate merchant; E. H. Matthews, Harley-street, merchant; Pranels, Round, United University Club, Pall Mail. The number of directors is not to be less than three or more than seven. Remuneration 1000, per annum, or such furber sum as general meeting may determine. The purchase consideration is 60000, a which amount the sum of 50000, is payable in fully paid up shares.

DIAMOND FIELDS ASSOCIATION (Limited). — Capital 1,000,000, in 201, shares. To acquire the diamond mines in South Africa, and to carry on business as diamond bankers, brokers, merchants, &c. The subscribers where the company of the control of the proof of the control of the control of the control of the proof of the control of the co The following joint-stock companies have been duly registered:-

company.

UNITED KINGDOM HORSE AND VEHICLE INSURANCE COMPAST (Limited).—Capital 50,000f., in 10f. shares. To carry on the general business of horse and carriage insurance company. The subscribers (who take one shares of the context of the context

—Capital 25,00%, in 11. shares. To take over the Holloway Batha The subscriber are—John Daniel, 42, Southampton Buildings, Holloway Batha The subscriber are—John Daniel, 42, Southampton Buildings, Holloway 15, Southampton Buildings, Holloway 15, Southampton Buildings, Holloway 15, Sussex-road, Holloway 2. W. Raiph, 12, Branksom-road, Brixton; J. Mesir, 17, Albinn-road, Dalston; R. J. Klamworth, Templar-road, Homerton.

BRADFORD CHRONICLE COMPANY (Limited)—Capital 10,00%, is 17, Shares. To take ever the Bradford Chronicle. The subscribers are—H. Klipley, Apperley, near Leeds, 2000; George Smith, Old Ashield, Bradford, 30; H. Mitchell, Bolley Hall, Bradford, 200; Joseph Hick, Bradford, 59; M. Wilde, Horton Hall, Bradford, 50; Joseph Smith, Bradford, 50; TYNE 100 A 1 1RON STEAMSHIP INSURANCE COMPANY.—This is sunlimited company, the object being explained by the title. The subscribers (all North Bhields) are—Edward Stevenson

ilimited company, the object being explained by the title. The subscribers (all North Shields) are—Edward Shotton, Robert A. Avery, W. Wilkie, W. Johnson, Robinson, E. Melburn, and S. Melburn.

MATHER LANE COTTON SPINNING AND MANUFACTURED COMNY (Jimited) — Charles 180 0000

MATHER LANE COTTON SPINNING AND MANUFACTURING CPANY (Limited).—Capital 80,0004.; in M. shares. This is a Lancashire open apinning company. The first seven subscribers are—Richard Marsh, Hestleif Hall, Hestleigh, Lancashire, 400; Thos. Smith, 17, Henry-street, Beiford, Lascashire, 200; Richard Gurnough, Leigh, Lancashire, 200; Joseph Hall, Leigh, 201, John Kien, Bedford, Lascashire, 200; Richard Barker, Westleigh, 200; Join Horrocks, Leigh.

HUGGLESCOTE GAS COMPANY (Limited).—Capital 5000., in M. sharet, To supply Hugglescote, Leicestershire, with gas. The subscribers are—B. Everst, Stone, 10; John Jackson, Hugglescote, 10; P. Antrobus, 16, St. Stephen's code, 10; John Jackson, Hugglescote, 10; P. Antrobus, 16, St. Stephen's code, Leicester, 10.

eicester, 10.
THAMES BOAT-HOUSE COMPANY (Limited),—Capital 2000., in Il. shares
o erect a boat and club house for the Thames Rowing Club. The subscribers 17 To erect a boat and club house for the Thames Rowing Club. The substruc-—James Hastic, Sunnyside, Putney, 25; J. Howell, jun., 2, Easton Villas, Pa

APRIL 2

gain. HALIFAX, TU Capital 40001., in ibers (who tak it, Halifax ; J. Ashington, Hali E SCOTCH

6d. per shar Lochore 8 and Fife Co o Scottish for the second of t

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new reserve port, has by years. All coeded the in future of the investment of amount with copper the copper cipitate a supply of taking fai 1875, the 1875. Th also been the part of : Yes, he

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Paris, Rassel-road, Kensington, 30; W. L. Slater, Ivy House, Beddington, J. W. Hughes, St. John's-road, Patney; A. C. Randall, Clarendon-road, Putly, I. C. Catty, High-street, Putney, 10; E. Catty, High-street, Putney, 10; E. Catty, High-street, Putney, 10; E. Catty, High-street, Putney, 10; The Control of the State of the State

ard of Trade, to use the world MINDROPATHIC BATHS COMPANY (Limited), MALIFAX, TURKISH, AND HYDROPATHIC BATHS COMPANY (Limited), In M. shares. To establish baths at Halifax, Yorkshire. The sub-capital 4000,, in M. shares. The sub-limit (Mary Limited), Halifax; James shes (who take one share each) are J. Hantley, Rose Villas, Halifax; James shes (who take one share each) are J. Hantley, Rose Villas, Halifax; James shes (Mary Limited), Halifax; James shes (Mary Limited), Halifax; J. Shalifax; F. Fleming, Halifax; John Mackerell, Halifax.

BE SCOTCH MINING SHARE MARKET-WEEKLY REPORT

AND LIST OF PRICES.

Daring the past week there has been rather more business doing, shares of iron and coal concerns, beyond a trifling improvement of the provided of the share of the provided of the tendency of prices has fed, per share on Omoa and Cleland, the tendency of prices has fed, per share on Omoa and Cleland, the tendency of prices has the downwards. Ebbw Vale are specially depressed at a fall of the provided of th

dd. bayers.

Silkstone and Doaworth, 10 to 12 dis. Sheepbridge, 90s. dis. Males, 7. Staveicy, A. 90s. prem.; ditto, D. 14½. Tredegar, A. 15 to 17. dis. Comberland, 12 to 11 dis. Comberland, 12 to 11 dis. Comberland, 12 to 11 shigher. Tharsis (on the report and meeting, referred, while hattington are is higher. Tharsis (on the report and meeting, referred, while hattington are is higher. Tharsis (on the report and meeting, referred, while head, and the into have changed hands 12s. 6d. lower, the pagares also report issued, and Rio Tinto have changed hands 12s. 6d. lower, the pagares also report issued (and into the changed hands 12s. 6d. lower, the pagares also report issued (ordinary), 6s., sellers. In shares of home mines, disagow Caraforle Pendelland (ordinary), 6s., sellers. In shares of home mines, disagow Caraforle Pendelland (ordinary), 6s., sellers. In shares of home mines, Giasgow Caraforle Pendelland (ordinary), 6s., sellers. In shares of home mines, figure and the language of the page of the page 12st 15 to 15 to

few at 94. Phospho-Guano 10.1 33. 9d., and Starbuck Wagon 103. In chesial companies' shares Landale's remain at 77s. 6d. to 80s., Lawe's better at 7 to 15 and Sewcaste unaltered at 60s. to 65s.

THARSIS SULPHUR AND COPPER COMPANY (Limited).—The bllowing are the principal contents of the report to be submitted at the ordinary general meeting of shareholders on the 19th inst. (today): The interest on the second issue of 150,000. debentures as been debited to interest and discount account as usual. The silway and pier, also rolling stock renewal funds, have been thrown ato one account, and raised to 100,000. by an addition of 7353., at of 12.477., composed of 11.126. net surplus from the downard traffic, after deducting interest on the first issue of 100,000. desenters, and 1351. net surplus from the upward traffic, after deducting interest on the first issue of 100,000. senters, and 1351. net surplus from the upward traffic, after deducting interest on the first issue of 100,000. senters, in the raismay traffic is considerable, the directors have resolved, after debiting with renewals, which will always constitute the first charge, to avail of it to refix a reserve fund for the purpose of meeting contingencies, equalising divising a reserve fund for the purpose of meeting contingencies, equalising divising a reserve fund for the purpose of meeting contingencies, equalising divisions, the first half being payable on May 19 next, and the second half on the one to the sum of 12,447t. has been placed to the reserve fund. One of the sum of 12,450 and 10 next, and the second half on the sum of 10 following; and that the balance of 10,858. be carried forward to the remember 10 following; and that the balance of 10,858. be carried forward to the office of the year 1517. Owing principally from a large stock of refined copper hand, the valuations of stocks in trade in Britain are increased by the sum of 9,80t., while those in Spain are less by 90,96t.

The spaisin property and plant accounts have been written down 10,110t.

sit, is common with others, a revival in the general trade of the country. The six on hand, and the production of iron ore for 1877, are now all but sold under streets, and the production of iron ore for 1877, are now all but sold under streets. The six of the production of iron ore for 1875, are now all but sold under streets. The six of the six of

were again lower by 2d. per ton, and the copper contents nave been etter.

unity of sterile removed was 117,714 cubic metres, being 113,894 less than The total coat was 13,528L, an increase of 3½d, per cubic metre as comits 1875. The sum charged at the usual rate per ton to the mineral raised 80l, thus leaving a surplus of 3752L, which has been credited to the north burden account. Now that the process of recouping has begun the direction attack and an analysis of 3752L, which has been credited to the north burden account. Now that the process of recouping has begun the direction at steady annual reduction of the amount standing at the debit of this mineral sent to the port for shipment was 213,455 tons, against 264,565 1875; and the ore calcined 133,549 tons, as against 189,802 tons in 1875. The surple of the centre look has been actively prosecuted during the past a last year's report the hope was expressed that by the month of June 18 be raised from the opencast of this lode. Subsequent reflection deterhe managers to carry out the uncovering on a larger scale, and it was not the close of the year that extraction was begun.

The produced by the north he overburded removed was 55,574 cubic metres, at a cost of 4982L. The

It is proposed this year to raise from the centre iode 60,000 tons. The quality of the mineral continues to be richer in copper than that produced by the north lofe. The overburden removed was 53,574 cubic metres, at a cost of 4982. The obal quantity of one raised during the year was 5712 tons, consisting of 4866 tons of large ore and 10 the calcination ground 610 tons. The mineral was charged with the sum of 301, leaving a balance of 4682. to be debited to the centre lode overburden account, brinzing the total of this asset to 13,873. The total mineral raised during 1876 from the north and centre lodes has thus amounted to 379,069 toos. As the thier mine, Calanas, it has done well during last year, and gives an earnest of eith better results for the future. The total mineral raised was allill tons, eithen 40,307 tons were put to calcination, against 32,143 tons in the previous year. The new of the sum of 301,000 to 100,000 to 100,0

there years.

Is inventory of waste heaps at Tharsis has been reduced by the usual annual and of 400%, and now stands at the sum of 13,334. In three years this ant will disappear from the inventories, as has been the case at Calanas, and copper obtained will go to reduce the cost of the general production of present at the Tharsis mines, as in former years. There has been a sufficient ply of labour, and the new them have been peaceful and industrious; they are migrain advantage of the facilities afforded by the savings bank, established in it, the deposits at the close of the year 1576 being 6737L, as against 2898L in a been inaugurated, and is being well attended, showing continued interest on part of the members of the Tharsis Company in improving the condition of

the people. The number of workers employed at Tharsis in 1876 was 2574, embracing a population of 5333, depending on the industry of these mines.

Numerous important additions have been made to the fixed property and plant account in Spain, such as the building of new stables for the mules, the partial completion of a new granary, and the laying down of railway for the internal services of the works, for which the usual liberal deductions have been made, depreciations in Spain being charged against production, and writing off in Glasgow to debit of profit and loss account. The total increase on this account for the foregoing items and the purchase of a large track of land for Teleras, and the reservoir, &c., at Calamas, has been 77087, as against 43% in 1375. The reservoirs are now well stock with water. The rainfail during the past year has been almost unprecedented; and although temporary stoppages of work had to be submitted to in consequence, there is an ample supply for the current year.

We do not see any occasion to submit remarks on a report and accounts, so clear as are the foregoing of the Tharsis Company, viewing the severe commercial depression that has existed, and still does so, with very little hope of improvement; we are, however, of opinion that it is highly satisfactory. Those who may wish to examine the company's progress in late years should read the reports given in the Mining Journal of April 24, 1875, and April 22, 1876, both of these and the report now given being so arranged here as to render comparison very easy. At the meeting to-day the foregoing report and accounts were unanimously adopted, and the dividends declared. The retiring directors and anditors were re-elected, which was all the business—the meeting passed off most satisfactorily. If necessary fuller details of the meeting will be given in next week's report.

Subjoined are this week's quotations, &c., of mining and metal shares quoted on the Scotch Stock Exchanges:—

Capital. Dividends.

I	C	api	tal.		Div	vide	uds.		
					Rate	per	cen	t. Description of shares.	
	Per		Paid		per	ant	nu		Last
	share		up.		evio				price.
	£10		#7		£ 85	5	£ 8	Arniston Coal (Limited)	81/4
	10	***	10				6	Benhar Coal (Limited)	93%
	10		8		6		6	Ditto	634
	100	***	45	1	8894	11.4	1s6d	Bolckow, Vaughan, and Co. (Lim.) A.	4914
	10	***	10		10		10	Cairntable Gas Coal (Limited)	8
	10	***	10		- 23	***	-	Chillington Iron (Limited)	80s.
	33		29	***	nil		nil	Ebbw Vale Steel, Iron, and Coal (Lim.)	7
Į	10		5		nil		nil	Fife Coal (Limited)	40s.
ł	10		10		nil			Glasgow Port Washington Iron & Coal(L)	508.
۱	10	***	10	***	_			Ditto Prepaid	508.
	10	***		***		***	_		
	10	***	10	***			3	Lochore and Capledrae (Limited)	95s.
	10	***			nit	***		Marbella Iron Ore (Limited)	748.
			10		nil			Monkland Iron and Coal (Limited)	534.
ł	10		10		5	***	4	Ditto Guaranteed Preference	5
	100		100	***	nil			Nant-y-Glo & Blaina Ironworks pref. (L)	211/2
	- 6		514		nil			Omoa and Cleland Iron and Coal (Lim.).	
	1	***	1	***	15	***	173	4 Scottish Australian Mining (Limited)	40a.
	1		ōa.	***	15	***		2 Ditto New	10s.
	Btock		100	***	5	***	nil	Shotts Iron	97
Ì								PPER, SULPHUR, TIN.	
	4		4		-		00.	Canadian Copper Pyrites (Limited)	18s.
	10	***	7	***	20a		90.		40
ı	1		í	***	15		71	Clarger Copper (Limited)	4- 64
I		***				***	4 7	4Glasgow Caradon Copper Mining (Lim.). 2	48. 04.
١	1	***	15s.		15	***	4.7	S Ditto New	
ı	10	***	914		nil	***	nu	Huntington Copper and Sulphur (Lim.).	31s.
١	25s.	***		***	-	***	_	Kapunda Mining (Limited)	6d.
Ì	4	***	4	***		***	-	Panulcillo Copper (Limited)	258.
}	10		10		nil	***	nil	Rio Tinto (Limited)	37s. 6d.
ı	20	***	20		_	***	7	Ditto, 7 per cent. Mortgage Bonds	151/4
ı	100		100	***	-	***	5	Do., 5 p.et. Mor. Deb. (Sp.Con. Bds.)	64
ì	10		10		nil	***	nil	Russian Copper (Limited)	40m.
	10	***	10		25			4Tharsis Copper and Sulphur (Limited)	231/8
	10	***	7		25			Ditto New	153%
	1	***	1	***	-	***		Yorke Peninsula Mining (Limited)	7s. 6d.
۱	1	***	1		_	***	-	Ditto, 15 per cent. Guaranteed Pref	
I	-		_	***					
I								GOLD, SILVER.	
ì	1	***	1	***	of the last	***	-	Australian Mines Investment (Limited).	
l	20		20			***	nu	Emma Silver Mining (Limited)	вя. 91.
ı	10	***	10	***	_	***	-	Flagstaff Silver Mining (Limited)	50s.
Į	5		5	***	-		-	Last Chance Silver Mining (Limited)	10s.
l	5	***	5	7	s. 6d	17	s. 6d		1.18s 9d
I								OIL.	
ì	10		7		5		g	Dalmeny Oil (Limited)	814
۱	1		i		-		71	Colkbank Oil (Limited)	100 00
ļ		***			_		07	Distance (Limited)	128. 04.
١	1	***		-00	_	***	0.5	4. Oakbank Oil (Limited) Ditto Uphall Mineral Oil (Limited) "A"	01/
۱	10				-	***	27	2 Uphan Aimeral On (Limited) "A"	3/2
۱	10	***			-		_	Dieto Deferred	10
١	10	***	814		5	***	9	Young's Paraffin Light & Mineral Oil (L).	47.8890
۱								MISCELLANEOUS.	
۱	80	***	25		10	***	5	London and Glasgow Engineering & Iron	
	30	-00	-4.					Shipbuilding (Limited)	263%
	20		1434		_		_	Peruvian Nitrate (Limited)	101/2
	10	***	10		6	***	6	Scottish Wagon (Limited)	111%
	10	000	4		6	***	6		970 84
	10	***		***		ntor	dm.		018, 00

Note.—The above lists of mines and auxiliary associations are as full as can be ascertained, Scotch companies only being inserted, or those in which Scotch in vestors are interested. In the event of any being omitted, and parties desiring a quotation for them and such information as can be ascertained from time to time to be inserted in these lists, they will be good enough to communicate the name of the company, with any other particulars as full as possible.

J. GRANT MACLEAN, Stock and Share Broker.

Post Office Buildings, Stirling, April 19.

LIFE OF CORNISH MACHINERY .- An interesting fact connected with the life of Cornish machinery was mentioned by Mr. West at the recent meeting of East Caradon and Marke Valley mines. He said he had erected, about 40 years since, the first steam-engine on the mines, and it was now looking almost as good as new. The machinery generally was in very good condition, and would be of little expense for some time to come.

at the secont meeting of East Caradon and Marke Valley mines. He said he had erected, about 40% east and of the commentary and in very good condition, and would be of little expense for some time to come.

BORING MCHINERY FOR CORNISI MINES—The quastion of the short properties of the properties of th

till their strong hopes are fully realised.

FLAGSTAFF.—The following may be of interest to shareholders, The clipping is from a Salt Lake paper:—
The clipping is from a Salt Lake paper:—
ELWIN DAVIS AT LARGE.—In September, 1869, Erwin Davis, then one of the shrewdest stock speculators on 'Change, failed for about half a million dollars. With his downfall Ralaston and the Bank of California rose and "fueld the roost."
His overthrow, it is said, was the result of a conspiracy. Fe has acknowledged about \$200,000 as just claims, and says he will settle with those holders, the other claims he will let the creditors hold. When he got broke all of Davis's sunshine-friends showed their true colours and knew him no more. A few, however, stood by him. They set him up on his pins, metaphorically speaking. Davis went to England. After laying pipe for the Herzegovinian insurrection against the Turkish Government, he sold Turkish bonds, short on the London market. Davis did not have any Turkish bonds but that made no difference. The insurrection came according to the programme, and he and his English stock operating friends filled

their "shorts." Davis has been sojourning the past summer over at some of the sulphur springs in Idaho, or it may be that he has ventured into Brother Brigham's dominions. He is well known in Zion, I understand. The principal and most strennous opponent to Davis's final discharge as a bankrupt was James G. Fair, one of the bonanza kings. Fair's claim is only \$5000, and it is presumed he bought it in order to make this opposition. His idea is to keep Davis off 'Chang, evidently flooring him. A few weeks ago the Registrar in Bankruptcy decided that Fair's objections would not hold water, and last Tuesday Davis was finally discharged as a bankrupt, and is free to go in again and get "squeezed," or squeeze somebody.

EXCHEQUER (GOLD AND SILVER) MINING COMPANY.

EXCHEQUER (GOLD AND SILVER) MINING COMPANY.

March 30.—There is not now in the mill one piece of the old Davidson machinery, but with the exception of a part of the pan and settler rooms, and the frame of the 8-stamp battery (also partially renewed), the whole mill is new from top to bottom. Like the Irishman's gun, it has got a new lock, stock, and barrel. I am prepared to prove that there is not, for its size, a better mill in California. Judging of mechanics here by those I used to employ in Scotland, I have come to the conclusion—won's do. All they care about here is to put in time; and to deal with such men you require a purse always full, so as to be in a position to discharge them at amoment's notice. My ideas of what amount of work a given anumber of corpenters should do in a given time I find are based on too high a standard. My predictions, therefore, have been so much at fault that I did not think it safe to hazard another, as to when Mr. O Hara would finish. The mill was not finished in every detail when I had it running. When I wired you on the 19th inst. we had just started, and our furnace tests are not yet completed. Frosty weather might have burst some of my pipes, but in the circumstances would not have prevented me from starting.

In reply to your postscript I beg to refer the directors to my weekly reports for the work done since October. From these they would have been informed that at that date the engine and boiler foundations were to complete, the engine and boiler to put in, the furnace chimney to heighten, the dry kiln to extend to double capacity, additional machinery not then provided to get in, the furnace machinery to put in, lumber, and shingles to provide—supply of which had been curtailed by low water, and the death of two ozen, &c. I had ultimately to connect the new lengthe to the saws, and shingling and planing machine to put up. In excavating for the new battery we found the old battery building foundations so much decayed that taking into account its circumscribed extent, t

ALMADA AND TIRITO CONSOLIDATED SILVER MINING COMPANY (LIMITED).

MINA GRANDE AND DIOS PADRE.

MINA GRANDE AND DIOS PADRE.

MINA GRANDE.—Capt. Wm. Clemo, Feb. 15: The stopes in this place continue the same as last week.

Feb. 22: The stopes in this place have no change.

March 1: The stopes in this place continue without change.

March 1: The stopes in this place has no change to notice.

Frank W. Breach, Feb. 22: We ought now, in view of the reduction of the black ores, to re-commence driving the 24 in Mina Grande and sinking a winze through from the 12, but I hesitate to incur this additional expense until we have the two pans at work on the ore.

March 1: We are breaking ore in the Mina Grande under the tunnel level, and it continues solid and very free from gangue. The roasting and beneficiating the black ores goes on very favourably, especially as regards actual loss of silver that takes place goes on very favourably, especially as regards actual loss of silver that takes place are panyonly 85 per ton. Considering the nature of the ore, I think this may be regarded as very satisfactory. Our chief aim is now to decrease the consumption of mercury that takes place in the pan.

DIOS PADRE.—Capt. Wm. Clemo, Feb. 15: The tunnel end has no change. The last week's drift was 7 ft. 3 in. There now remains to reach the shaft 59 ft. The water has not gone down in the shaft in the past week.

Feb. 22: The tunnel end continues in good ground for driving. No change to notice. The last week's drift was 6 ft. 6 in.; there now remains to reach the shaft 53 ft. 8 in. The water has not gone down in the shaft.

March 1: The tunnel end has no change to notice. The last week's drift was 6 ft. 6 in.; there now remains to reach the shaft 37 ft.

— Frank W. Breach, Feb. 26: You will note that good progress is being made in the tunnel towards the Dios Padre shaft - 6 ft. 6 in. if way every stable the perpendicular of the Dios Padre shaft - 6 ft. to 7 ft. per week.

March 1: You will note by Oapt. Clemo's letter that we may expect to reach the perpendicular of the Dios Padre shaft in seven weeks at the present rate of driving

e shaft, will leave the ground dry for sinking another 10 fms., and as it appears underlie sharply to the west, we shall soon be through it, and I think, consider g the saving that will be effected by sinking dry, we ought to continue until this accomplished, even if we should have to go to the 54 instead of stopping at the 52 his week we shall be only 4 ft. short of being down to the latter level, if so much

FOREIGN MINES.

ST. JOHN DEL RRY MINING COMPANY (Limited).—Advices re-elved March 31, 1877, ex Mondego (s.), dated Morro Velho, March 1:— GOLD EXTRACTED TO DATE.—The produce obtained from the mineral treated luring the second division of February, being a period of 11 days, amounts to 469 8 cits. It has been derived as follows:—

	ghly freed from killas	Oits. 2,949·3 4,917·0	from	1058	=	Oits. per t 2.787 8.405
Re-treatmen	t	7,866·3 603·5	**	1643		4·787 -367
Total	= 976-4209 oza trov - :59	8,469·8	r ton	1643	-	5-154

Besides the Praia stamps gave 90'S oits of gold
The foregoing is very low produce, being attributable to the large proportion of very poor mineral having been quarried as met with in the western section of the mine, the most westerly stope being worked on, and this has reduced the standard yield of the general mineral to 2'757 oits, per ton. This very poor layer of mineral is now nearly passed through, and is reaching a better quality of ore on the northwest portion of the same stope.

We may reasonably expect a better gold return from this part of the mine exerciation in March, but we cannot hope for average produce until we get borers placed on the eastern mineral, which shall be done as soon as we can get sufficient log timber to complete the sollar constructed for that purpose. The mineral roughly freed from killas gave, as may be seen, \$400 oits.

Advices received April 14, 1877, ex Eibe (s), dated Morro Velho March 17:—
General Operations.—We have had favourable and fair weather during the past fortnight, the entire rainfall having only amounted to '60 in. The greater part of the impeding earthslips have been cleared away, and many repairs to the roads within the establishment effected. Some of the water courses are still under repairs, and several tunels—one large one on the Cristaes, and two within the establishment—have miners engaged in re-timbering and repairing them.

MINE DEPARTMENT.—Fortunately we have been also to preserve the force of this department intact, though of course there have been undue calls on the miners for effecting required repairs, and removing timberwork in consequence of the destruction effected by the late heavy rains.

The work underground has been carried on with considerable regularity, and no interruption has arisen in the working of the pumping and hauling machinery. The output of mineral has been on quite the average scale.

The mork underground has been carried on with considerable regularity, and no interruption has arisen in the working of the pumping and hauling mach

days 29-20 wagons.

This is very good duty, taking into account the proportion of holes in sinking a driving into hard mineral. The above return shows the largest native force t company has had for some time past in the mine department.

SINKING, STOPING, AND DRIVING.—These operations have been steadily procured up to date, but owing to the mine agent being seriously ill and unable visit the mine the usual monthly measurements have not been taken for the mon of March.

cuted up to date, but owing to the mine agent being seriously ill and unable to risit the mine the usual mouthly measurements have not been taken for the month of March.

Mineral Lode.—There is no change to report as noticeable in the mineral formation. A very large proportion of poor mineral continues to be met with in the western stope of the B section, though there is in this part at present a little more pyritic gold bearing quartz mixed with the light talcose substance which has so lately been predominant in this part of the mine.

The lode from below this stope eastward continues the same, and is quite of full size and good quality down to the sump, and also in the eastern driving, but we cannot at present get the B kibble to bear on the lower part of this stoping ground until the shoot is extended downwards in that direction. Unfortunately we have not had timber to enable us to do this work, nor even to complete the large sollar at section 21st, where we could also get good mineral, which would give average produce in the stamps. This want of timber is causing for the time being a considerable diminution in the produce which could be extracted from the lode in the fair course of working, the poor western stope being now pretty well cleared.

The fearful weather we had in February quite precluded the conveyance of timber laid in, as it was ready for transport in the earlier part of the season, when both the weather and state of the roads. We ought to have had a stock of timber laid in, as it was ready for transport in the earlier part of the season, when both the weather and state of the roads afforded opportunity of having this done. Under the renewed authority given to aid the carriers in providing teams of oxen we shall get a good supply of timber during the year, and I hope, if the weather proves favourable, a large quantity may be got into Morro Velho before the end of April. On receipt of the requisite log timber not a day shall be lost in having it applied in the miner in the way needed to enable a

pulverised.

In February the quantity of sand amalgamated amounted to 5215 cubic feet, which only yielded 4.53 cits, of gold per cubic foot. The loss of quicksliver was 154 lbs. The amalgamation process has been worked regularly. The armatres have been worked fair rate of speed steadily, except when stopped for repairs to the circles or the driving machinery.

for repairs to the circles or the driving machinery.

PRODUCE FOR FERRUARY —The gold return extracted during the month of February amounts to 23,623-4 oits. It has been derived as follows:

Oits. Tons. Oits. per ton.

From general mineral Mineral roughly freed from killas	8789·9 12,963·3			2·957 8·155	
Re-treatment	21,758·2 1,560·3 310·9	4.0	4562	4·769 •341 •069	
Total				5.179	

7219-8 438-8 131-2 ,, 1435 = 5.031 ,, = -092 7789·8 ,, 6258 oz. per 1435 - 5:428

a full supply of water, the stamps are well provided with mineral, and

duty is being done in reducing it. e mine work is going on well, and the output is steady and regular INF AND MINING WORKS, SKETCH OF LODE, &c.—Under the above

consideration.

As a formal report is desired on the several sections of the mineral formation

mem nunecessary now to enter upon the partial consideration or review of

spection.

Mr. Dale is at present seriously ill and confined to his bed—quite unable to answer any questions on this subject. As early an opportunity shall be taken as stroumstances may permit to have the desired inspection made and report prepared, the mine agent furnishing his part, and I shall supply such observations or opinions on the matters contained in the report as may appear to be desirable and

opinions on the matters committee to the requisite state of the separate treatments of mineral. — Two separate treatments of mineral Benarate Treatment of a third separation. SEPARATE TREATMENT OF MINERAL.—Two separate treatments of mineral are now being certified on. Means shall be provided to admit of a third separation being conducted. These will be the full extent of the experiments which the company's present arrangements and save accommodation will admit of being carried on simultaneously. Euch an experiment should be conducted through a period of several divisions, in order to secure as nearly as practicable a fair average result.

EXPLORATIONS.—The explorations suggested in the western part of the mine—1.—IN THE WESTERN PART—By cross cutting south with the view of meeting the mineral, the late Captain Jackson was of opinion would be found south of the present workings. It would have been desirable if some specific horizon had been indicated.

After conferring with the mine agent and the more experienced miners, the most desirable point shall be determined on and a level driven for the purpose of exploring the ground south of the present workings in the way now desired.

already advised, has a full force of the company
tion of its extension eastwards.

3.—TRIAL LEVEL, GAMBA LODE.—There can be no objection to reconsider the
question whether a trial level might not be driven north to test the Gamba lode.
It shall be submitted to the best skill of the mine department, and the result com-

question whether a trial level might not be driven norm to less the trained normalic shall be submitted to the best skill of the mine department, and the result communicated as soon as obtained.

It is true I am of opinion the Gamba lode, forming as it did a junction with the Cachoeira part of the formation near the surface, continued in its dip southward until it terminated in that body in depth, the lower part being excavated with the general body of that formation.

When the Gamba lode, previously left unworked above a certain Horizon, was afterwards excavated down until it nearly reached the point of junction in depth, the wedge-shaped partition wall between it and the Cachoeira excavation being then very thin gave way and fell into the Cachoeira. There does not appear to me to be any doubt as to the termination of the Gamba branch of the mineral formation at the horizon here referred to.

Silli, if the board desire it, we shall be ready to drive any level of exploration at such points as may be indicated for the purpose of trying for the Gamba lode at the much greater depth the mine is now at.

The following telegrams have been recived:

On March 23: "Froduce eight days (first division of March), 7750 oits.; yield So oits, per ton. Produce small from large temporary admixture of quartz and killas. General work in mine and on surface going on well, and satisfactory duty being performed."

On April 3: "Produce 12 days (second division of March) 11,000 oits.; yield, 50 oits, per ton. Produce small from large temporary admixture of quartz and killas. General work in mine and on surface going on well, and satisfactory duty being performed."

On April 1: "Produce in mine and on surface going on well, and satisfactory duty being performed."

On April 1: "Produce in mine and on surface going on well, and satisfactory duty being performed."

eing performed."

On April 12: "Produce for the month (March) 29,000 cits.; yield, 5:2 cits. per man. All going on well."

ll going on well."

Agram from Morro Velho, dated Rio de Janerlo, April 17, and Morro Velho, 2: Produce eight days, first division of April, 8750 oits.=3390l.; yield, per ton. All going on well.

DON PEDRO NORTH DEL REY.—Report for February: Produce 533.48 tons, dry weight, 3222 oits.—1369/. 7s. Cost, including the erection of

To otts, per ton. All going on well.

DON PEDRO NORTH DEL REY.—Report for February: Produce from 1533-48 tons, dry weight, 3222 oits.—1369/. fs. Cost, including the erection of permanent pumping machinery (labour and materials) and all general expenses, 2696/. fls. 7d. The produce is comparatively small, being a short month, the force limited for breaking ores, consequently the output was 700 tons less than for January; however, I am pleased to state that we have now a fair prospect of increasing the force.—Telegram from Rio (April 11), referring to a later date than the above report, advised 4350 oits, for the month of March.

RICHMOND CONSOLIDATED.—Telegram from the mineat Eureka, Nevada: Hall, London—Week's produce of two furnaces, \$32,000: refinery, \$30,000.

— R. Rickard, March 24: Yery little work has been done in the mine since my last. The 800 winze is down 95 it, without any change since last week. The 200 drift has been driven 25 ft. in favourable ground for working. We have started a drift from the 500 station to explore the western ground; it has been let by contract, and the ground is favourable for driving. No change in any other part of the mine. On Monday we stopped Nos. 2 and 4 furnaces, and we are now only running two, which are doing good work. Ws shall finish the stock of coal on hand in a few days, when we shall shut down for repairs.

— R. Rickard, March 31: The 900 drift has passed through the quartzite and into limestone, and is showing favourable indications for ore. The winze sinking in bottom of the 800 has been suspended for want of air. We have inxies and want far now only to the level of the 900 drift, when it is down to that depth we shall cross-cut to the drift from shaft. No work has been down to track, a winze has been subcroton the 200 and 400 levels is being explored, and unize has been subcroton the sou hand saily from these old workings. Two furnaces are in good working order and doing pood work, the other three furnaces are under repair.

CONDES COMPANY OF CHILL: Telegram

working order and doing good work, the other three furnaces are under repair. CONDES COMPANY OF CHILL. Telegram from Valparia's, April 16: 17 tons of regulus and 15 tons of raw ore have been shipped per Aconcagua.

OREGON HYDRAU LIC (Gold).—Telegram from the superintendent: We have cleaned up Reed and Thoss claim—approximate gross result, \$2300; estimated experience of the control of the contr

wherever I can get it.
PROVIDENCIA AND NEW ROSARIO (Sliver).—Extracts from Mr. M. P.
PROVIDENCIA and New Rosario (Sliver). The winze has been sunk a couple of PROVIDENCIA AND NEW ROSARIO (Sliver).—Extracts from Mr. M. Cummins's letter, March 13: San Diego: The winze has been sunk a couple wars, making a depth of 15 vars (41 feet). The quemazon has gradually becomere, making a depth of 15 vars (41 feet). The quemazon has gradually becomered this week assayed 8 marcs 25 cts. (about 84.8s, per ton), and the small respectively of the second of the second of the second second properties of the second second

have still a very good lode; the lode has been somewhat hard for driving, but appears now to be a little easier, and to be changing into a rock resembling more that of San Diego.

8. Miguel Bouth: The eastern cross out of this level has been driven 6 varsa 75 cts. (about 17 ft.), and has lately carried more spar than it did. Unless the footwall of the lode should increase or lessen its underlie, we may hope to intersect it with our cross-cut in about 9 varsa (about 25 ft.) east of the shaft.—Hacienda: Mr. Ivey wrote me yesterday that he intended to wash off our first torta to day, and expected that it would yield about 250 marcs of silver (400.). The second torta will probably be wished off within the next ten days. I expect over 1000, worth, of silver from the ores that are in the hacienda, but will be able to state the amount more precisely in my next letter. The total number of cargas dressed during the fortight amounts to 13% cargas (about 16 tons).

CAPE COPEER.—Capt. Tonkin, Feb. 28: Ookiep: The 80 fm. level east, from No. 19 winze, has fallen off in value lately, the present yield being 5 tons of high quality copper ore per fathorn. The 80 south-east, from No. 19 winze, is now being driven through ground which is entirely unproductive, but, notwithstanding the present poverty of the end, I have no doubt we shall find good ore in the immediate neighbourhood. The 80, north-east of shaft, is still in unproductive ground. The 63 east, from No. 13 winze, has improved considerably since last report, the present end of the driving being worth 4½ tons of copper ore per fathorn. The valuable ground at this place is in the lower part of the driving, and this fact is in accordance with what we had reason to expect—that the main bunch is in the bottom of the 68, in the eastern part of the mine. The stop in the 80 continues to yield well, and the same can be said of the one in bottom of the 68. The other stopes throughout the mine are yielding the extinated quantities of copper ore, and on the whole they are looking

sessing floors.

— Capt. Tonkin, Capt. Ninnis, Feb. 24: Spectakel: The stope in the 46 yielded defrately well during the pest month; in fact, the greater part of the return was two from that place. At the present time the said stope will produce a fair

2.—IN THE EASTERN PART.—The exploratory level being driven eastward, as already advised, has a full force of the company's best borers employed in prosecution of its extension eastwards.

3.—TRIAL LEVEL, GAMBA LODE.—There can be no objection to reconsider the question whether a trial level might not be driven north to test the Gamba lode. It shall be submitted to the best skill of the mine department, and the result communicated as soon as obtained.

It is true I am of opinion the Gamba lede, forming as it did a junction with the Cachoeira part of the formation near the surface, continued in its dip southward until it terminated in that body in depth, the lower part being excavated with the Gamba lode, previously left unworked above a certain Horizon, was afterwards excavated down until it nearly reached the point of junction in depth, the wedge-shaped partition wall between it and the Cachoeira excavation being then very thin gave way and fell into the Cachoeira. There does not appear to me to be any doubt as to the termination of the Gamba branch of the mineral formation. Still, if (the board desire it, we shall be ready to drive any level of exploration at the horizon here referred to.

Still, if (the board desire it, we shall be ready to drive any level of exploration at the horizon here referred to.

On April 3: "Produce eight days (first division of March), 7750 olts.; yield 55 olts, per ton. Produce leght days (first division of March), 1750 olts.; yield 55 olts, per ton. Produce leght days (first division of March) 11,000 olts.; yield 55 olts, per ton. Produce eight days (first division of March) 11,000 olts.; yield 55 olts, per ton. Produce leght days (first division of March) 11,000 olts.; yield 55 olts, per ton. Produce leght days (first division of March) 11,000 olts.; yield 55 olts, per ton. Produce leght days (first division of March) 11,000 olts.; yield 55 olts, per ton. Produce leght days (first division of March) 11,000 olts.; yield 55 olts, per ton. Produce leght days (first division of March)

per Courland (s.)—Sale by Public Ticketing: 230 tons of even dis average of 11s. 3d. per unit, realising approximately 5300,—Pul Forms Average of 11s. 3d. per unit, realising approximately 5300,—Pul Forms Sale: 334 tons on 24th inst.

PESTARENA UNITED.—April 10: District of Pestarena: We are pleasured in the sent in the sent in the pole and south we have also a good lode at present. The low wide. In the 90 end south we have also a good lode at present. The low in the one incline shaft is not looking so well.—District of Val Topps: 1 western part of the great quartz lode we have a slight improvement south of the third cross-cut in Zero level. The lode in the winze belinding its much the same, yielding 8 tons per fathom, worth 12 dwts, per one mediate end south, below Zero, continues poor, and the end north produces of one.—Great Quartz Lode: The intermediate end under No. 2 levels of one.—Great Quartz Lode: The intermediate end under No. 3 levels without change, yielding about 10 tons of ore to the fathout of the continues to yield 3 tons to the fathom, worth about 5 dwts. One of the continues to yield 3 tons to the fathom, worth about 5 dwts. One of the same, yielding about 10 tons of one to the fathout has become more favourable for driving. On the lode and place of the same, yielding about 2 tons per fathom, worth 7 dwts, per one of the same, yielding about 2 tons per fathom, worth 7 dwts, per one of the same, yielding about 2 tons per fathom, worth 7 dwts, per one of the same, yielding about 2 tons per fathom, worth 7 dwts, per one of the per sent time lookings so well as when reported on on the 7th. Shift in the fourth cross-out east, in No. 2 level. The stopes, on the whole, are the persent time lookings so well as when reported on on the 7th of the per fathom for the per sent time lookings so well as when reported on on the 7th of the per fathom for the per sent time lookings so well as when reported on on the 7th of the per fathom for the per sent time lookings so well as when reported on on the 7th of t

MOTOR ENGINES.

In connection with that class of motor engine wherein four cylin In connection with that class of motor engine wherein four six, ders with their pistons are arranged radially round one central characters with their pistons are arranged radially round one central characters in the piston rods being all connected to the said crank, so that a pistons of each of the cylinders, being made to perform their strokes consecutively and in order, effect the rotation of the said and its shaft, some ingenious improvements have been introduced by Mr. C. Beissell, of Cologne. The cylinders are arranged at a part round the crank shaft, so that two and two are dismethedly opposite each other; they are single acting, the steam or other find pressure acting only on the outer sides of the pistons to cause the to perform their instrokes. In two of the cylinders the createst and the color of the cylinders the createst are considered to the cylinders the createst are considered. pressure acting only on the outer sides of the pistons to caue the to perform their instrokes. In two of the cylinders the steamen with full pressure throughout the stroke, while the other two, which are of larger diameter and diametrically opposite the first two, as supplied with steam from these, the steam being made to actapansively therein. The proper distribution of the steam to the sweal cylinders is effected by a rotary valve rotated by the crack shift. The valve is of conical form, fitting into a conical chamber, into the sides of which open massages communicating with the outer said. sides of which open passages communicating with the outer ended each of the cylinders. The valve is hollow, and its interioris diright by diaphragms at right angles to its axis into four separate control of the cylinders. by diaphragms at right angles to its axis into four separate capartments; of these the innermost one communicates by side opening, firstly, with an annular channel in the casing, through wish steam is introduced from the boiler; and, secondly, with the steam passages of the two high-pressure cylinder. The next compartment has two apertures communicating respectively with the one high-pressure cylinder, and with its opposite low-pressure cylinder; the third compartment has two apertures communicating respectively with the other high-pressure cylinder and its opposite low-pressure one, and the fourth compartment has three apertures by which communicates respectively with each of the two low-pressure gib-ders, and with an exhaust passage leading from the valve casing to a condenser, or wherever required.

ders, and with an exhaust passage leading from the valve cauge a condenser, or wherever required.

Assuming the piston of the one high-pressure cylinder to best the end of its outstroke, while that of its opposite low-pressure cylinder is at the end of its instroke, the piston of the other high-pressure cylinder will be at about half outstroke, and that of its opposite low-pressure cylinder will be at about half instroke. The rotary value will now be in such a position that steam will be about to pass from the instruction of the value to the first high-pressure. the innermost compartment of the valve to the first high-presency linder to cause it to perform its instroke, while the opposite of pressure cylinder will just have been made to communicate with cylinder to cause it to perform its instroke, while the opposite lappressure cylinder will just have been made to communicate with the outer compartment of the valve, so as to allow the steam which had previously entered it from the opposite high-pressure cylinder, and had acted expansively therein, to escape to the exhaust. At the same time the second high-pressure cylinder and its low-pressure cylinder will both be in communication with the third compartment of the valve, so as to allow the steam to pass from the former into the latter. When the piston of the first high-pressure cylinder he performed about half its instroke, the second one will be at the sof its outstroke, and the valve will begin to admit steam to it is the same time the second low-pressure cylinder will be at the sof its instroke, and the valve will establish its communication with the exhaust. The valve is rotated by means of a disc, which as slide upon its spindle, and which has a semicircular slot into which fits an extension of the crank pin. For reversing the engine the disc. fits an extension of the crank pin. For reversing the engine the distance that have a solution of the crank pin, and the valve is turned 180° by hand, whereapon the disc is slid forward so as to cause the crank pin to enter the other end of the slot. The four cylinders are formed in one, without to a central casting inside, which is the engine crank, and which is fixed to the end of a base plate carrying bearings of engine-shaft.

IMPROVED ROTARY ENGINE.—The invention of Messrs. P. and J. Kwapp, of Danbury, Connecticut, consists of a cylinder having an annular space, in which a rotating piston is placed, and a shaft ming through the central portion or core of the cylinder, and continuous through the central portion or core of the cylinder, and continuous through the central portion or core of the cylinder. nected with the said piston by a thin arm, which passes between annular spring plates, secured in the centre of the core of the cylinder. The said plates form a packing, which permits the piston arm to write the passes between the property of the core of the cylinder. passes, preventing the to rotate, but closes together after the arm steam from coming into contact with the shaft.

MELTING LADLE PLUGS.—The importance of good stoppers for closing the discharge openings of ladles or vessels used, especially in the Bessemer process, in the filling of the ingot moulds in the filling of the ingot mould in the filling mitted; Mr. A. Mason, of Horwich, near Bolton, has, therefore, wented an improved method of attachment, whereby the stopped are not so liable to become detached from the rods as when previous methods of attachment are employed. He forms a slot or opening extending from one side to about the centre of stopper, so that of formed with a head can be passed through the slot into a central control of the slot into a cent position in the stopper, the remaining space in the slot being the He prefers to form filled up with ganister or refractory material. He prefers to form the rod with a tee-head, and to so form the slot as that when the rod is introduced into position and turned a quarter round it cannot be drawn out of the stopper in that direction of its length. Be makes the slot wider inside the stopper than at the outside, so as a retain the filling material.

HOLLOWAY'S PILLS.—These pills are more efficacious in strengthening a bilitated constitution than any other medicine in the world. Fer one of nerview habit of body, and all who are suffering from weak digestive organ, or show health has become decayed by bilious affections, disordered stomach, or liver on plaints, should lose no time in giving these admirable pills a fair trial. Cogle, colds, asthma, or shortness of breath, are also within the range of the sasain powers of this very remarkable medicine. The cures effected by these pills and tauperficial or temporary, but complete and permanent. They are a mids they are efficacious, and may be given with confidence to delicate [emails and year]

APRIL

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eomp which earri FOREIGN MINING AND METALLURGY.

The French iron trade has presented little change during the past meek, and there is little news to communicate with respect to it. Hopes are entertained in some quarters in connection with the proposed renewal of treaties of commerce that the import duties imposed on iron will not exceed 5 per cent., but these hopes do not appear to rest on any reliable basis. At Paris the iron trade has been tolerably firmly sustained with regular sale. In the Nord prices are flactuating between 61. 12s. and 61. 16s. per ton. In the Hauteser flactuating between 61. 12s. and 61. 16s. per ton. In the Hauteser flactuation is maintained with some firmness at 61. 16s. per ton. In the Meurthe-et-Moselle pig remains at the low quotation of ton. In the Meurthe-et-Moselle pig remains at the low quotation of 21.8s. 10t. An order for 18,000 tons of steel rails has been given out by 21.8s. 10t. An order for 18,000 tons of steel rails has been given out by 21.8s. 10t. An order for 18,000 tons of steel rails has been given out by 21.8s. 10t. An order for 18,000 tons of steel rails has been given out by 21.8s. 10t. An order for 18,000 tons of contract price has not transpired. The Commentry and Fourchambault Company animoses a dividend of 21, per share for 1875.6.

The Administration of the Belgian State Railways has invited tenders for the upply of 62,500 tons of coal to meet the consumptive requirements of that system. The result of this competition may be expected to define prices for a time. The working coal miners begin to couplain of the reductions which are almost everywhere imposed upon them in Belgium; this week the miners of the Boubier C lliery, at Châtelet, have refused to go down into the pit, but their strike has not occasioned any trouble in the district. M. fabure, the managing director of the Bayemont Collieries, has just ordered for those collieries an extraction engine of 1000-horse power. The order has been given to M. Hanrez, machinist, of Marchiennesar-Poli.

There has been very little passing in copper at Paris. Good exposed on iron will not exceed 5 per cent., but these hopes do not

Labure, the managing director of the Baylanda Condered for those collieries an extraction engine of 1000-horse power. The order has been given to M. Hanrez, machinist, of Marchienne-ap-Pont.

There has been very little passing in copper at Paris. Good ordinary Chilian in bars has made 774, per ton; ditto ordinary descriptions, 744, per ton; ditto in ingots, 784, per ton; English best selected, 794, per ton; and pure Corocoro minerals, 764, per ton. In Germany transactions in copper have been very restricted, and prices have not sensitly varied. Tin has continued very quiet upon the Dutch markets; disposeable is held at comparatively high rates; but, on the other hand, purchases are only made to meet the most night requirements of consumption. Banca is held at 42½ fl., and disposeable Biliton at 42 fl. to 42½ fl; ditto, with delivery in May and June, at 41½ fl. A sale of Billiton, which has just taken place at Batavia, comprised 10,000 piculs; transactions were effected at an average of rather less than 46½ fl. per picul. Upon the Paris tin market Banca has made 774, per ton; Billiton, 764, per ton; Straits, 774, per ton; Australian, 764. per ton; Billiton, 764 per ton. The German tin market is have been generelly weak, although prices have scarcely varied. The Paris lead market has been well supported at 214, for lead from all sources. The German lead markets have been characterised by an attitude of expectation, but events appear likely, upon the whole, to involve an important advance in prices. Silesian zinc has brought 214, 16s. per ton at Paris. The German rinc markets have not presented any material variation, but some time must elapse before each establishment can have its production fully engaged, and there is no immediate prospect of any revival in questions. Continual efforts are being made to reduce wages; sometimes these efforts are successful, but sometimes the reductions proposed are not accepted. A strike, for instance, has occurred at the Zone Worksat Marchienne-au-Pont, where nearly 300 workmen

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The week has presented little of interest in the French coal trade: The week has presented little of interest in the French coal trade; very few new transactions of importance have been announced, and the winter season is being finally disposed of with very low prices prevailing. It seems very doubtful whether the approaching summer will bring with it any improvement in affairs. A few orders have been received at the pits from the sugar manufacturers, but these orders have been of no great extent or importance, and have not satisfied anyone. As regards the basin of the Loire, in which the coal trade has been rather better supported than in the Nord or the Pas-de-Calais, there is little fresh to report this week. A pamphlet hasappeared under the title of the "Coal Crisis in France;" it is from the pen of M. Boutarel, who sees no remedy for the present depression except an increase in the duties imposed on foreign coal entering France. Contracts are about to be let at Paris for the supply of 17,000 tons of coal annually for three years, for the administration of public assistance in that capital. of public assistance in that capital.

MIXING CONCRETE.—The machine for this purpose invented by Mr. W. W. WILSON, of Dublin, consists of a kind of endless chain of buckets fitted to overlap one another, so as to form a continuous jointed, trough which travels in a horizontal direction, and receives the material from separate hoppers provided with adjustable gauges to regulate the quantity of material delivered. Mixers or blades work in the trough to mix the materials to a certain extent before they are passed into the mixing machine. The buckets have only a bottom and two sides, which overlap those of the succeeding buckets, so as to form a continuous trough, as above mentioned. They are attached to endless chains passing round chain wheels or drams on horizontal shaft, toone of which power is applied to drive the endless trough. The latter travels beneath two or more hoppers in succession, which open at bottom into the trough, and contain the one (say) sand or ballast, and the other cement. The trough may first receive the sand or ballast, and the other cement. The trough may first receive the sand or ballast, which fills to a certain height (regulated by an adjustable gauge roller mounted next to the hopper), and then the cement which further fills the trough to a height regulated by an adjustable scraper or plate. As the trough travels onwards with its charge the latter meets a pair of blades working rapidly to and fro across, near the bottom of the trough, which undercut the face of the materials and cause the cement to fall down over the face of the materials and cause the cement to fall down over the face of the materials and cause the cement to fall down over the face of the materials and cause the cement to fall down over the face of the materials and cause the cement to fall down over the face of the materials and cause the cement to fall down over the face of the materials and cause the cement to fall down over the face of the materials and cause the cement to fall down over the face of the materials and cause the cement to fall down over

PORTABLE ELECTRIC LIGHT.—An ingenious little electric light Portable Electric Light.—An ingenious little electric light apparatus has been invented by Mr. Facio, of Paris, and is applicable to watches, walking sticks, and such like. The watch, for instance to which it is applied is united by a chain to a link bar, which may be placed in a button hole, another chain communicates with a pile which may be carried in the waistcoat pocket; to the link bar another chain is attached in communication with a receptacle or box containing wick, and a "Geissler" tube, which will transmit the spark produced by the electricity. Thus the time can be easily seen in the dark. The apparatus is composed of other conducting chains coming from the pile, and of a receiver which may be perfectly independent, the receiver being provided with a wick or bobbin, and the receiver may be made like a locket or other article if desired; communication between pile and locket or other article may be produced by means of a button or other suitable appliance if desired; communication between pile and locket or other article may be produced by means of a button or other suitable appliance placed in any convenient position. The chains may be formed or composed of two wires and surrounded by insulating material, which latter may be covered with some precious metal or other material as fancy or taste may dictate. The lighting material may be carried by the watch itself, or the light generating apparatus may be provided with a case to hold the watch or other object to be lighted will receive the action of the lighting tube containing the "Geissler" tabe, and the case itself will be independent of the object to be ighted.

"CRANSTON" \mathbf{THE} ROCK DRILL SUITABLE FOR

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BOILERS; AIR COMPRESSORS, worked by Hydraulic or Steam-power; STEEL for MINING DRILLS; PUMPING, and all other MINING MACHINERY supplied.

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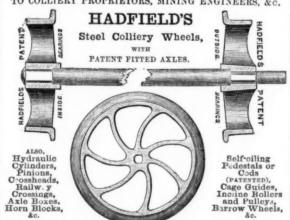
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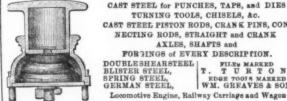
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Where the largest stock of steel, files, tools, &c., may be selected from .

Are NOW PREPARED to SUPPLY their DRILLS, the ONLY ONES that have been SUCCESSFULLY WORKED in the MINES of CORNWALL. At DOLCOATH MINE, in the HARDEST known ROCK, a SINGLE MACHINE has, since its introduction in July, 1878, driven MORE THAN THREE TIMES the SPEED of HAND LABOUR, and at TWENTY PER CENT. LESS COST PER FATHOM.

In ordinary ends two machines may be worked together, and at a proportionately increased speed. They are strong, light, and simple, easily worked, and adapted for ends and stopes, and the sinking of winzes and shafts.

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The "SPECIAL" DIRECT-ACTING STEAM PUMP

Holman's Patent Self-acting Exhaust Steam Condensers.

UPWARDS OF 12,000 "SPECIAL" STEAM PUMPS ARE IN USE.

After eight years of successful application for all purposes to which steam-driven pumps can be applied, THE "SPECIAL" STEAM PUMP STILL MAINTAINS THE FIRST POSITION IN THE MARKET, notwithstanding that it alone-of all direct-acting pumps-has been subjected to the great variety of severe tests that must be encountered in such a period of time. Some valuable improvements have been suggested in the course of a long experience, and their adoption has rendered the apparatus at once the simplest and most certain in action. There is absolutely no extraneous gear, and the steam cylinder is no longer than the pump. The valves are of easy access, and are suited for pumping fluids and semi-fluids of almost any

Holman's Condenser

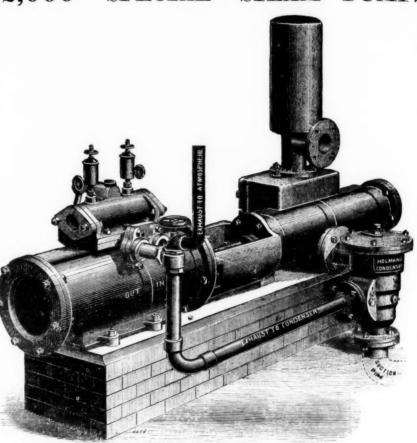
TURNS WASTE STEAM INTO GREAT POWER.

SAVES HALF ITS COST IN PIPES AND CONNECTIONS.

PREVENTS ALL ESCAPE OF STEAM IN MINES OR ELSEWHERE.

REQUIRES NO EXTRA SPACE.

SAVES TWENTY TO FIFTY PER CENT. OF FUEL.



WILLIAM ELLIOT, Esq., of the Weardale law and Coal Company, writes under date Sept. 17th, 1875, as follows:—"We have now THIRTY-FIVE of your SPECIAL STEAM PUMPS in operation at the various collieries under my charge-some of them employed pumping water out of our pile to the depth of 50 fms.—others employed in the pits, and a good many feeding Boilers. I have no hesitation in saying that we have found them the Cheapest and Best Pumps of the kind we have tried. I can with confidence recommend them to intending purchasers."

Messrs, Burt, Boulton, and HAYWOOD, Chemical Manufacturers, of London, bare FORTY of the "SPECIAL" STEAM PUMPS is use at their works.

HOLMAN'S CONDENSERS

Are made to suit any size and kind of Steam Pump. They form a part of the suction pipe of the Pump, and while they effectually condense the exhaust steam they produce an average vacuum of 10 lbs. per square inch on the steam piston, increasing the duty of the Engine, and effecting a saving in fuel of from 20 to 50 per cent.

In Mining operations these Condensers will be of great value.

All Boiler Feeders are recommended to be fitted with these Condensers, as not only is the exhaust steam utilised in heating the feed water, but is returned with it into the boiler.

GREAT REDUCTION IN PRICES.

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Diameter of Steam CylinderIn.	. 3	3 4	4	4	5	5	5	6	6	6	6	7	7	7	7	7	8	8	8	8	8	9	9	9	9	9	10	1
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Intending purchasers of Steam Pumps would do well to observe the great length of stroke, short steam cylinder, and short piston of the "Special" Steam Pump, as compared with the short stroke, long steam cylinder, and long the Pumps of other makers, as the efficiency and durability of the machine, and the space occupied by same, greatly depend upon this. The advantage of long strokes will be obvious when purchasers are reminded that each set of a delivery valves of a "Special" Steam Pump with 24 in. stroke, running at 120 ft. per minute, would open and close only 30 times per minute, as against 120 times per minute in a Pump with only 6 in. stroke performing same duty.

The "Special" Steam Pump can be worked by Compressed Air as well as by Steam.

HUNDREDS of these PUMPS are USED for HIGH LIFTS IN MINES, for which purpose they are made with 21, 24, 26, 28, 30, and 32-inch Steam Cylinders, and 36 48 and 72-inch Strokes.

The following Testimonial gives one Example of the Power Gained by the action of Holman's Patent Condensers:-

Memrs. TAFGYE BROTHERS AND HOLMAN.

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Ings. The perfect manner in which this important result is accomplished by your indicating a steam pressure of 36 lbs. per square inch, 80 yards from the Pump. Condenser is extremely creditable to you, and merits the thanks and commendate the thanks and commendate working of the Holman's Patent Steam Pump Condenser which you have supdit to so. The complete condensation of the steam is, spart from its value in the description of 10% lbs. per square inch, 80 yards from the Pump. Ings. The perfect manner in which this important result is accomplished by your indicating a steam pressure of 36 lbs. per square inch, 80 yards from the Pump in ings. The perfect manner in which this important result is accomplished by your indicating a steam pressure of 36 lbs. per square inch, 80 yards from the Pump in ings. The pump the dicating a steam pressure of 36 lbs. per square inch, 80 yards from the Pump in ings. The pump the dicating a steam pressure of 36 lbs. per square inch, 80 yards from the Pump in ings. The pump the indicating a steam pressure of 36 lbs. per square inch, 80 yards from the Pump in ings. The pump i

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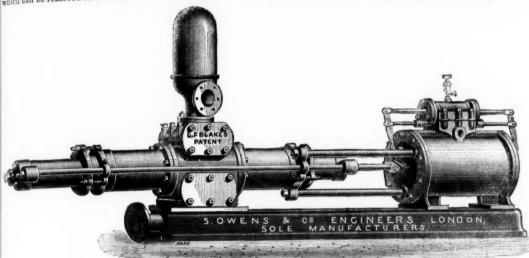
BLAKE'S PATENT STEAM PUMP.

MORE THAN 10,000 IN USE.

S. OWENS &

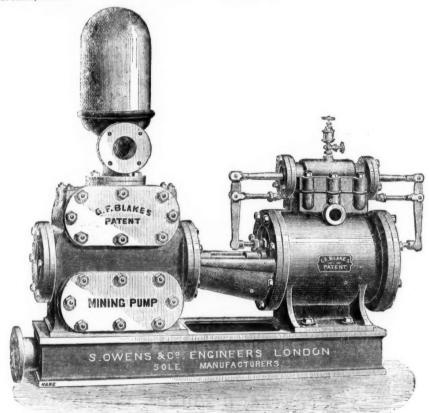
Hydraulic and General Engineers, Whitefriars-street, London; Agent in Scotland: W. Hume, 195, Buchanan-street, Glasgow.

These PUMPS from their SIMPLICITY, RELIABILITY, DURABILITY, and ECONOMY are SPECIALLY SUITED FOR MINING PURPOSES, where large quantities of water require to be raised from great or medium depths with CERTAINTY. They are double-action in their construction, throwing a constant stream of water, can be made of any stroke to suit the space in which they have to work, can be arranged with any combination of steam and water cylinders to suit the pressure and lift against which it is desired to work them, are made of the very best materials and highest class of workmanship, and all working parts can be readily got at by any ordinary workman, and replaced if necessary by a duplicate part (all such being interchangeable) in the shortest possible time. For situations where gritty and sandy water has to be pumped the DOUBLE-PLUNGER PATTERN is recommended, where space is limited the PISTON PUMP is better suited, a novel feature of which is the PATENT REMOVEABLE LINING, which can be removed in a few minutes and substituted with a new one, without disturbing any other part of the pump.



Blake's Improved Double-plunger Steam Pump. S. OWENS AND CO.,

In placing the BLAKE STEAM PUMP before the mining world, believe they are offering the BEST, MOST RELIABLE, and ECONOMICAL PUMP that has yet been made, and solicit an inspection of various sizes in operation at their works, White-frian-street, Fleet-street, London.



Blake's Improved Mining Pump, with Patent Removeable Lining to Pump Cylinder,

combination of these Pumps may be had to suit circumstances. The following are some of the SIZES SUITABLE FOR MINING

bis, of steam cylinders In. bis, of water cylinders In. ength of stroke In. b, of strokes per minute uantity in gallons per	18 30	18	12 5 18 30	12 6 24 30	14 4 24 25	14 5 24 25	14 6 24 25	16 4 24 22	16 5 24 22	16 6 24 22	16 8 24 22	18 4 24 22	18 5 30 22	$^{18}_{\ 6}_{\ 30}_{\ 22}$	18 8 30 22	20 5 30 20	20 7 30 20	20 8 36 17	20 9 36 17	24 6 36 17	24 8 42 15
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PATENT CONDENSERS

be supplied for any size pump to effect a saving of fully 30 per cent. in the consumption of fuel, greatly increasing their efficiency

The Blake Pump will work under water, and as efficiently with compressed air as with steam.

BLAKE'S DONKEY PUMPS FOR FEEDING BOILERS KEPT IN STOCK.

PATENT

"INGERSOLL ROCK DRILL,"

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"4.—The steam or air cushions at each end of cylinder effectually protect from injury.
"5. Its having an automatic feed, giving it a steady motion, &c.
"6. Its greater steadiness and absence of jar and vibration experienced in other drills, which is very destructive to their working parts, &c.

"7. Its greater power is some FORTY PER CENT. in favour of the Ingersoll."

Medals awarded for several years in succession "For the reason that we adjudge it so important in its use and complete in its construction as to supplant every article previously used for accomplishing the same purpose."

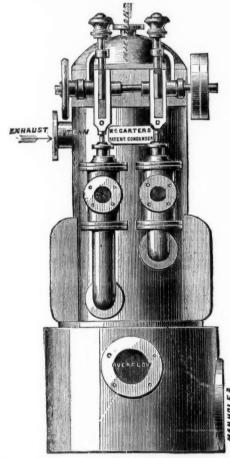
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Estimates given for Air Compressors and all kinds of Mining Machinery. Send for Illustrated Catalogues. Price Lists, Testimonials, &c., as above.

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KIRK, RAMSDEN, AND CO. (LIMITED)

HUDDERSFIELD.



These Condensers can be placed inside or outside of the enginehouse. They draw their own injection water, and require no foundation. Specially adapted to Pumping and Winding Engines, effecting a saving from 20 to 30 per cent. in coal, and increases the power of the Engine.

Engineers, Millwrights, Founders,

FORGE PROPRIETORS.

Makers of Pumping, Winding, and Blowing Engines, Condensing and Non-condensing.

Horizontal and Beam Engines for all purposes.

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MARSDEN. ORIGINAL PATENTEE, AND ONLY MAKER IN THE UNITED KINGDOM.-2000 IN USE

These Machines are in extensive use amongst the Tin, Copper, Lead, and other Mines, and are showing a clear saving of 4d. and 6d. per ton over the ordinary mode of hand spalling, besides a distinct of stamping power equal to 30 per cent., which is a considerable saving. They are already well known to the mining world, and can be seen in operation at some of the leading Cornish and other Machinery.

Exclusively adopted by Her Majesty's Government, and by most Continental Governments.

Machines for Hand and Steam Power, specially designed and largely used for Crushing Pyrites, Limestone, Cement, Coal, Rocks, Ganister, &c., at all the principal works in the Kingdom.

"They occupy an important position as labour-saving Ma-hines."—Architect.

chines."—Architect.
"The Machine is well designed, simple, but substantially made, and is capable of reducing any material to fine gravel, such as copper ore, and is certainly preferable to the stamps in use for that purpose."—Mining Journal.
"Your Machine will crush from 60 to 120 tons of hard limestone per day of 10 hours."

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This illustration shows my new patent REVERSIBLE Cubing Jaws, which are made in upper and lower sections, and the backs planed, so that when the bottom part of the lower section becomes worn it can be turned upside down, and thus made equal to new. This process does not require the aid of skilled labour, the white metal being entirely dispensed with.

THESE JAWS WILL WEAR FOUR TIMES longer than any other, and they can be renewed at a fractional cost.

renewed at a fractional cost.

Used by all the Great Mining Companies in the World, and are shown by Testimonials to effect a Saving of FIFTY per cent over every other system

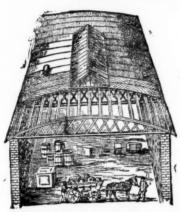
Awarded 62 Gold and Silve Medals:-

Paris, 1867. Santiago, 1869. Leeds, 1875. Leicester, 1868. Cardiff, 1872. Bolton, 1872. Ayr, 1873-4-5-6, &c.

"No Machine is equal to yours, combining as it does my great power, simplicity of construction, and cheapness." Mr. Marsden's Stone Breakers are so thoroughly well have and appreciated that it is unnecessary for us to describ the construction or speak of their merits.—Engineering.
"By the use of your Machine we have reduced the contesting and forming road material to one-half its previous occ." Our 16 by 7 Machine has broken 4 tons of hard whindman 20 minutes for fine road metal, free from dust."

nguage, if required), on application to the sole maker of "Blake's" Stone Breaker: MARSDEN, FOUNDRY, LEEDS, ENGLAND. \mathbf{R} . soho

M'TEAR AND CO.'S CIRCULAR FELT ROOFING.



FOR GREAT ECONOMY CLEAR WIDE SPACE.

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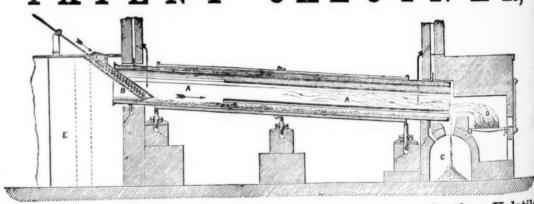
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